REPORT OF COMPLIANCE SAMPLING INSPECTION
and
SANITARY SEWER OVERFLOW INSPECTION
at the
CHARLESTON WASTEWATER LAGOON
CHARLESTON, MISSOURI
NPDES PERMIT NUMBER: MO0120081
MARCH 3-4, 2015
by the
U.S. ENVIRONMENTAL PROTECTION AGENCY
Region VII
Environmental Sciences and Technology Division

INTRODUCTION

At the request of the Water, Wetlands, and Pesticides Division, Water Enforcement Branch (WWPD/WENF), a Compliance Sampling Inspection was conducted at the Charleston Wastewater Lagoon on March 3-4, 2015. The inspection was conducted under the authority of Section 308 of the Clean Water Act, as amended. The inspection was conducted in accordance with EPA Region VII Standard Operating Procedures for Compliance Inspections (ENST SOP No. 2332). This narrative report and the attachments present the results of this inspection.

PARTICIPANTS

City of Charleston:
David Harris, Public Works Director
Allen Rodgers, Wastewater Operator
Richard Goode, City Manager

U.S. Environmental Protection Agency (EPA) Region VII:
Peter Green, Environmental Scientist

FACILITY DESCRIPTION

The Charleston WWTF is a 4-cell aerated lagoon system located in the northeast part of the city (see map and aerial photo-Attachment 1). The lagoons have a total surface area of 16.5 acres and a volume of 50 million gallons. The original, 3-cell aerated lagoon was constructed in 1990. A fourth cell was added on in 2000 to accommodate the new correctional facility (currently housing ~1800 inmates). The new cell is the largest (6.8 acres), provides ~53% of the volume and retention time, and serves as the primary cell. Attachment 7 includes a diagram of the lagoons and aeration system. In 2012, a tertiary treatment system (Lemna®) was added to enhance ammonia removal. This went on line

in August 2012. An ultraviolet disinfection process was also added (2 banks, with 4 sets of 5 lamps in each). The plant has a design flow of 1.5 MGD and average flow (last 3 years) of 1.26 MGD. It discharges to an unnamed tributary of Stevenson Bayou. The plant receives domestic wastewater from the City's ~6000 residents (including inmates). There are no significant industrial users. The plant is monitored and maintained by a full time certified operator assisted by two other Public Works' staff (in addition to Mr. Harris, an "A" certified wastewater operator).

INSPECTION PROCEDURES

I arrived, unannounced, at the Charleston City Hall on Tuesday afternoon, March 3. I was directed by the staff there to the Public Works facility, where an employee contacted Mr. Harris. He arrived a few minutes later, and I introduced myself, presented my credentials, and explained the purpose and scope of the inspection. We proceeded to the treatment lagoons, and Mr. Harris escorted me to the influent and effluent structures. I collected grab samples at both locations, and also installed an automatic sampler for the raw influent. I took photographs of the lagoons and associated equipment (Attachment 2). We then proceeded to the City's water plant to collect Discharge Monitoring Reports. We also visited the main lift station (next to the water plant) and the Brown Shoe and 6th Street lift stations for inspection. The next morning I met Messrs. Harris and Rodgers at the lagoons. I collected additional samples of the plant influent and effluent. Mr. Harris and I went to City Hall, where we discussed the City's operation and maintenance of the collection system, SSO reporting, and efforts to reduce inflow and infiltration (I/I). Mr. Harris gave me copies of the Discharge Monitoring Reports (DMRs) for the last 3 years (37 months; Attachment 3), semiannual I/I Reduction reports (Attachment 4), SSO Reports (Attachment 5), Wastewater Department budgetary information (Attachment 6), excerpts from a 2009 Facility Plan for the lagoons (Attachment 7), and other documents. I issued a Notice of Potential NPDES Permit Violations (NOPV-Attachment 8) for exceedances of the City's effluent ammonia limits in December 2014 and January 2015, which Mr. Harris signed. I summarized my preliminary observations and EPA Region 7's inspection report procedures.

Given the winter weather advisory that was issued for southeast Missouri that morning (including an inch of sleet and up to 12 inches of snow), it appeared unlikely that access to the lagoon would be possible the following day. I therefore departed and transported the samples I collected back to the Science and Technology Center in Kansas City that day. The following Monday, March 9, I received an email from Mr. Harris responding to the NOPV (see Attachment 9). On April 15, 2015, I contacted Mr. Harris to discuss the City's I/I reduction program. I also called Mr. Goode to inquire about per capita water use in Charleston.

Sampling Procedures: Assisted by Messrs. Harris and/or Mr. Rodgers, I collected grab samples of the influent and effluent on both days by dipping a pole sampler into the streams of flowing wastewater. The influent samples were collected from the raw inlet on the primary cell (see photo 2), and effluent samples were collected from the weir vault

after the ammonia reactors and ultraviolet disinfection channel (photo 14). I also collected a *composite* sample of the plant influent on the second day using an Isco model 3710 automatic sampler. (In order to avoid dangerous driving conditions en route to the laboratory on March 4, it was necessary to halt the collection of the influent composite sample after only 17½ hours). I installed the sampler by suspending a weighted length of new Tygon suction tubing approximately 3 feet below the top of the standpipe, and programmed it to collect a 100 mL aliquot every 30 minutes over the next 24 hours. I placed a clean Nalgene bottle in the sampler with ice and initiated sampling. The following morning, I removed the collection bottle, mixed it vigorously and poured the contents into pre-labeled sample containers. I also measured the pH and temperature using a portable field meter. I obtained daily flow totals from Mr. Rodgers' logbook.

All of the samples were placed immediately into an ice chest with ice and secured in the back of my vehicle. On Wednesday, March 4, I delivered the samples to the EPA Region 7 Science and Technology Center (R7 STC) laboratory, along with field sheets and chain of custody documentation. I followed Region 7 ENST standard operating procedures in the collection, packaging, transportation, and handling of the samples; see SOP No's. 2333-Field Measurements, 2334-Sample Collection and Sample Design, and 2420-Sample Management.

FINDINGS AND OBSERVATIONS

Attachment 10 is a completed Water Compliance Inspection Report (EPA Form 3560-3), and Attachment 2 contains photographs taken during the inspection.

1. NPDES Permit: The city's current NPDES permit (see Attachment 11) took effect on January 23, 2009 and expired on January 22, 2014. The permit contains effluent discharge limits for BOD (45 mg/L monthly average/65 mg/L weekly average), TSS (70/110), pH (≥6), ammonia (seasonal), oil & grease (10/15), antimony, copper, lead, and zinc. The limits for ammonia, oil and grease, and the four metals became effective 3 years from the date of issuance (i.e., January 23, 2012). Weekly effluent monitoring is required for conventional pollutants, with monthly monitoring for effluent oil & grease, the 4 metals, and influent BOD and TSS. Other monitoring parameters include: 11 other metals and cyanide (quarterly); Whole Effluent Toxicity (annual); and total toxic organics (once/permit cycle). The permit also requires the City to develop and implement a program for maintenance and repair of the collection system, and to submit semi-annual progress reports describing measures taken to locate and eliminate sources of infiltration and inflow (I/I) into the collection system.

Mr. Harris said that an application for renewal of the permit was submitted in July 2013. He has periodically contacted MDNR to inquire about the status of the permit and was told they were working on a backlog of permit issuances (see phone log-Attachment 12). Although the expired permit did not contain limits for E. Coli, the City has installed an ultraviolet disinfection system in anticipation of new permit limits. The system is on line and will be started up at the beginning of the disinfection season this spring.

2. Discharge Monitoring Reports: Discharge Monitoring Reports (DMRs) for the last 3 years are in Attachment 3. Monthly average effluent data for the last 4 years are also tabulated in Attachment 13.

Permit Compliance: There were no exceedances of permit limits for effluent BOD or TSS in the last 3 years. The average and maximum effluent BOD concentrations reported were 12.3 mg/L and 40.7 mg/L, respectively. The average and maximum TSS concentrations were 15.5 mg/L and 37 mg/L.

There were no permit exceedances for oil and grease (which is always < 5 mgL), pH, or metals.

Ammonia: The seasonal limits for ammonia became effective in January 2012. The new ($1.3 million) nitrification reactor went on line in August 2012. Before that, the existing lagoon system was generally capable of meeting those limits during the *warmer* months, but colder water temperatures inhibit the growth and activity of the nitrifying bacteria needed to remove ammonia. The table in Attachment 13 shows that effluent ammonia concentrations exceeded the seasonal permit limits in the first 5 months of 2011 *and* 2012 (though the limits were not yet in effect in 2011).

In the 30 months *since* the ammonia reactors went online, there have been 3 periods of noncompliance (over 6 individual months): April-May 2013; February-March 2014; and December 2014-January 2015 (see table below). I issued a Notice of Potential NPDES Permit Violations (Attachment 8) for the exceedances in December 2014 and January 2015.

Ammonia Exceedances; August 2012-January 2015:

Date	NH3 Conc (mg/L)	Monthly Average	Limits	Effluent Temp.
04/29/13	**13.9**	**3.9**	2.9/9.3	16.1 C
05/06/13	**12.6**	**4.6**	1.4/6.6	17.3 C
02/10/14	**9.59**		2.9/9.3	2.1 C
02/18/14	**9.95**	**8.7**	2.9/9.3	3.4 C
Mar.'14		**2.97**	2.9/9.3	3.5 C
Dec. '14		**3.29**	2.9/9.3	7.8 C
01/12/15	**10.4**		2.9/9.3	2.8 C
01/20/15	**11.4**		2.9/9.3	6.1 C
01/26/15	**11.8**	**10.5**	2.9/9.3	5.1 C

In his response to the NOPV (Attachment 9), Mr. Harris attributed the elevated ammonia in December 2014 and January 2015 to the low ambient temperatures. The nitrification system performs well as long as water temperatures are at least 6 Celsius or greater, he said. Historical data relied on by the engineers indicated that these conditions would generally be met. In each of the last two winters, however, water temperatures have dropped below 6 C, as evidenced by the icing over of the polishing lagoon. (Daily and monthly-average effluent temperatures are included alongside the effluent violations in

the above table). Attachment 14 includes an email to MDNR regarding the February 2014 violation, when the water temperature was measured at 2 C. When I called Mr. Harris on April 15, he said that he had received the final laboratory reports for February 2015, and that the lagoons had also exceeded the monthly average ammonia limit in February 2015.

Mr. Harris said that the City has discussed this problem with their engineers (Smith & Co.), who in turn have contacted the vendor. One solution proposed was to recirculate some of the effluent back through the lagoons. This would require installing a lift station. (Mr. Harris said that he expected sewer rates to be raised in order to provide the needed upgrade). Another factor contributing to the cold temperatures in the ammonia basin is the long retention time in the lagoon system. Hence, bypassing the primary cell during the coldest months might help by keeping effluent temperatures above 6 C.

The ammonia violations in April and May of 2013 were *not* caused by low temperatures. In a May 2013 email to MDNR, Mr. Harris suggested that something toxic to the nitrifiers may have been discharged to the sewer. (Nitrifying bacteria are generally more sensitive to toxic shocks than other treatment organisms). The operators responded by adding supplemental nitrifying bacteria, and effluent ammonia values below 0.05 mg/L were restored by May 20. They have continued to seed the basins, when necessary, with 5 gallons at a time of the commercially-supplied nitrifiers.

Aside from the event in April/May 2013, the ammonia reactors appears to perform well as long as water temperatures remain moderate. The high DO and pH levels consistently reported for the plant effluent indicate favorable conditions for nitrification reactions. There were no exceedances in December 2012/January 2013, when the mean effluent temperature was 7.9 C (the mean ambient *air* temperature was 6 C). The mean effluent temperature in December 2013 through February 2014, in contrast, was only 4.4 C (mean ambient-1 C), and in December 2014/January 2015, the mean effluent temperature was 6 C (ambient-3 C).

Influent Loading: The average and maximum influent BOD concentrations reported over the last 37 months were 125 mg/L and 371 mg/L, respectively. Together with the average flow (1.26 MGD), this indicates an (estimated) average daily BOD loading of 1300 pounds per day (ppd). This is somewhat higher than the expected BOD loading for a population of ~6000 (~1020 ppd). The average and maximum influent TSS concentrations were 80 mg/L and 277 mg/L, which corresponds to ~850 ppd.

Since June 2013, the City has reported the monthly average percent removal rates for BOD and TSS on their DMRs. In January and March of 2014, the percent removal was less than the permit-required 65%. The effluent concentrations were not particularly high during either month, but influent concentrations were very low (40-60 mg/L).

Influent characteristics are monitored using grab samples. The characteristics of raw domestic wastewater may vary significantly throughout the day. Although the permit does not require it, collecting 24-hour composite influent samples would provide more

confidence in assessing the actual characteristics of the raw wastewater, and the rate of organic loading at the lagoons. (The pollutant concentrations in the composite sample I collected on March 4, while still relatively low, were approximately double the concentrations in the *grab* sample I collected on March 3).

3. General Inspection Observations: The lagoons, aerators, and blowers appeared to be in good condition and well-maintained. The blowers installed in 2000 were renovated 2 or 3 years ago, and the blowers for the nitrification basin are new. The blowers are alternated regularly. The aeration diffusers in the lagoons were replaced last year by Environmental Dynamics International (EDI). The City recently signed an 8-year contract with EDI Aeration Works (see Attachment 15; price quote and description) to conduct biennial inspections and perform preventive maintenance of the lagoon aeration system and membranes.

As seen in photo 11, a very light-weight white foam was observed on the surface of the nitrification basin and some of it was blown out of the basin by wind. Mr. Harris attributes this to the intense aeration process and possibly some detergent residues in the effluent. No foam or other impacts were observed in the receiving stream below the outfall.

Mr. Harris said that no exceedances have ever occurred for effluent metals and the City has asked MDNR to remove the monitoring requirements for metals from the permit. The Gates Rubber Company facility, the potential source for such metals, shut down several years ago. (The Brown Shoe Company manufacturing facility is also shut down).

The WWTP operators measure pH and DO levels in the lagoon influent and effluent every day. I reviewed a logbook at the water plant documenting daily calibration of the meters. The records appeared to be thorough and complete.

Influent and effluent samples for compliance monitoring are taken to Environmental Analysis South in Jackson, Missouri. I reviewed analysis reports and chain of custody documents, which were thorough and consistent with DMR reports.

4. MDNR Inspections: The WWTF was last inspected by MDNR on June 12, 2013. Attachment 16 is the report from that inspection. No compliance issues were identified at the WWTP. It was noted that the Gilmore lift station (#18) was in need of renovation, and the valves at the Gilmore and Brown Shoe lift stations needed to be exercised regularly.

5. Collection System: The collection system consists of 27 miles of gravity lines and 8 miles of force mains, with 331 manholes and 20 lift stations.

Attachment 17 is a list of the lift stations, with their current condition and renovation dates. The lift stations are equipped with audible and visual alarms, and are checked daily. None of them are equipped with backup generators. Mr. Harris said that the City is rebuilding 2 lift stations per year. Since 2007, 13 of the lift stations have been

renovated. The Department budget includes $35,000 per year for repair/replacement of pumps. The table in Attachment 17 describes the Paul lift station as being in poor condition and in need of a total rebuild. It is scheduled to be renovated in Fiscal Year 2015/16.

During this inspection, I visited the master lift station (adjacent to the water plant), the 6th Street lift station and the Brown Shoe factory lift station (see photos-Attachment 2). Some of the equipment (a shaft and the floor of the wet well) at the Brown Shoe lift station had just been replaced that morning. Comprehensive inspections of all 20 lift stations are conducted every year by an outside contractor. The contractor provides inspection reports, with photographs.

Mr. Harris said that the final 2014/15 budget includes ~$95,000 for replacement of the control panel at the master lift station and for a dewatering pump (for sewer excavation work). The residential sewer user fee was raised in June 2014 to $23.75 per month. The City has a trailer-mounted combination jetter/vacuum machine.

Copies of the last 7 semiannual I/I reports are included as Attachment 4. In 2010, Waters Engineering designed a plan for a comprehensive survey and rehabilitation of the collection system. Attachment 18 includes a spreadsheet showing the planned activities for each of the 19 lift station zones over a 10-year period. The first 5 years (2011-2015) are devoted to system characterization through smoke testing, CCTV inspections, and manhole inspections. Rehabilitation of gravity sewers and manholes would occur over the succeeding 5 years. For planning purposes, it was assumed that 15-25% of the gravity lines and manholes would require rehabilitation work in most of the zones.

I briefly reviewed Mr. Harris' copy of a Facility Plan for the collection system which was completed by Waters Engineering on February 2, 2015. Although Charleston's sewers are relatively deep and the water table is high, the report assessed the magnitude of I/I in the collection system as *not* excessive, based on average dry and wet weather WWTP flows. (The ratio of the maximum and average daily flows was 2.268 MGD/1.202 MGD, or 1.89 in 2013, and 2.114/1.509, or 1.4, in 2014). Typical dry weather flows in Charleston are 0.9 to 1.0 MGD. Given the population of ~6000, this equates to more than 150 gallons per person per day. Mr. Goode told me that per capita water consumption in Charleston is generally about 30% higher than the national average. He attributes this, in part, to the fact that the water is not metered, so there is little incentive for residents to conserve. The City has appealed to residents, through the news media, to conserve water, and restricts lawn irrigation during dry periods.

The City is ahead of schedule and has smoke-tested the entire collection system in the last 3 years. Mr. Harris told me that the total rehabilitation costs are now expected to be ~$700,000 (substantially less than the $2.62 million estimate projected in the spreadsheet in Attachment 18). The City has been repairing broken riser tops and cleanouts that were discovered on inspection, and is conducting camera inspections of 9 identified problem areas. A total of ~2000 linear feet were recently cleaned and camera-inspected (and additional camera work has been done since this inspection). Of 330 manholes inspected

so far, 18% have defects allowing infiltration. Although 35% of the manholes are of brick construction, more defects are being found in the precast structures.

After the 2011 floods, the City received financial assistance from FEMA to do some repairs on the collection system. (According to Mr. Harris, the underground infrastructure may also have sustained some damage on May 2, 2011, when the Mississippi River levee [10 miles from Charleston] was demolished by the Army Corps of Engineers).

6. Bypasses/Overflows: Nine sanitary sewer overflows (SSOs) were reported during the week of April 27-May 4, 2011. Copies of the overflow reports are included in Attachment 5. After a week with more than 13 inches of rain in the area, there were minor overflows at three manholes near the 6th Street lift station on April 27, 2011. Again on May 2, and over the next several days (with heavy rains continuing), overflows were reported at the same three locations, and three others.

No overflows have been reported since 2011. Prior to 2011, the last overflow reported was in 2008, when the prison lift station malfunctioned. Basement backups do not occur in Charleston; there are very few basements because of the shallow water table.

7. EPA Sample Results: The report of laboratory analysis for the influent and effluent samples I collected on March 3 and 4, 2015, is included as Attachment 19. The concentrations of BOD, TSS, oil and grease, pH, and metals in the lagoon effluent samples were well within permit limits.

The concentration of ammonia in the two effluent samples was 2.14 mg/L and 4.29 mg/L. The 2-day average, 3.2 mg/L, exceeded the monthly average permit limit of 2.9 mg/L, and was similar to the average reported last March by the City. (Mr. Harris later told me that the effluent ammonia concentrations had decreased after the week of this inspection, and the monthly average permit limit was not exceeded in March).

The elevated ammonia concentrations were not surprising, given the cold temperature of the effluent (2.6 to 2.7 C). The concentrations of nitrite and nitrate in the effluent indicate that *significant* nitrification was occurring in the lagoons *and/or* the tertiary treatment system.

For the influent samples, the BOD, TSS, and ammonia concentrations were relatively low for domestic wastewater, but were higher on the second day (based on a composite sample) than the first day (based on a grab sample). The 2-day average removal rates were 70% for BOD and 88% for TSS.

CONCLUSIONS/RECOMMENDATIONS

1. The new ammonia reactor installed at the Charleston lagoons in 2012 has improved the City's compliance with their effluent permit limits for ammonia. However, the limits were exceeded during 7 of the 32 months since the reactor went on line (as of April 1, 2015). Five of these exceedances occurred during cold months, when the biological nitrification process is inhibited (it ceases at temperatures below 5 degrees C). The City should continue to investigate strategies for maintaining compliance with permit limits throughout the winter months, and implement them.

2. The City should continue efforts to reduce infiltration and inflow in the collection system.

3. Per capita water consumption in the City of Charleston is 30% above the nationwide average. This increases the operation and maintenance costs for the wastewater collection and treatment systems as well as water treatment and distribution costs. The City should redouble efforts to promote water conservation.

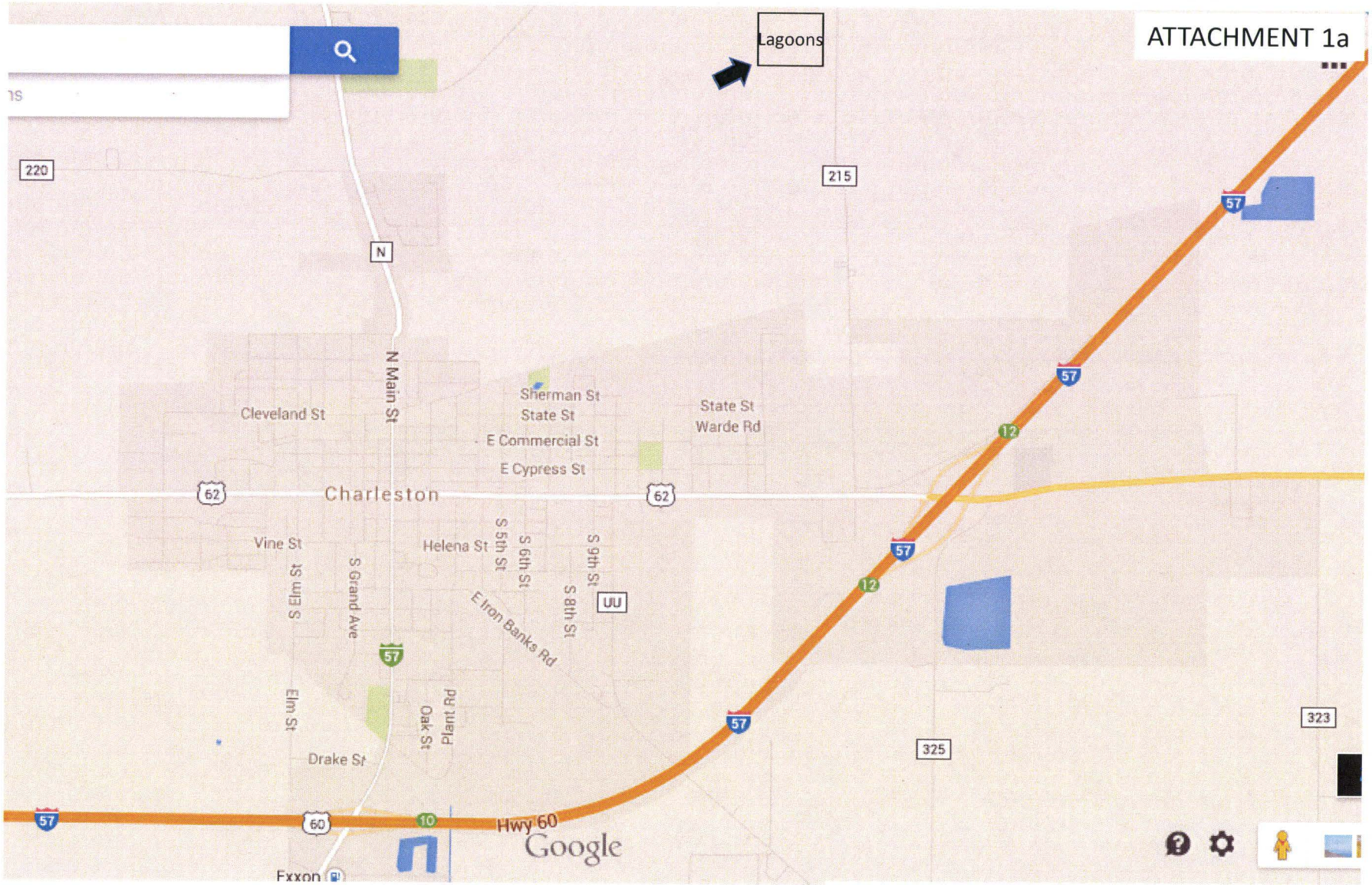
4. In order to provide more accurate data to characterize raw influent and organic loading to the treatment lagoons, the City should consider collecting 24-hour composite samples of the raw influent.

Peter M. Green
Environmental Scientist
Activity No.: WGP385
Date: April 16, 2015

Attachments:

1. Map & Aerial Photo of Charleston and Charleston Lagoons (2 pages)
2. Digital Photos Taken during Inspection, with Captions (25 pages)
3. Discharge Monitoring Reports; 2012-2015 (87 pages)
4. Semiannual I/I Reduction Reports; 2011-2013 (31 pages)
5. SSO/Bypass Reports (18 pages)
6. City of Charleston Budget Spreadsheets, FY 2014-2016 (5 pages)
7. Excerpt from 2009 Facility Plan for Charleston Lagoons (5 pages)
8. Notice of Potential NPDES Permit Violations (NOPV; 1 page, 3 copies)
9. March 9, 2015 Email Re: Response to NOPV
10. NPDES Water Compliance Inspection Report (form 3560-3) (4 pages)

11. City of Charleston NPDES Permit No. MO0120081 (iss. 1/23/2009; exp. 1/22/2014, and Fact Sheet (30 pages)
12. Mr. Harris' Phone Log, Re: Status of NPDES Permit Renewal
13. Summary of Monthly DMRs; 2011-2013 (2 pages)
14. Email Correspondence with MDNR, Re: Ammonia Exceedances in May 2013 & February 2014 (2 pages)
15. Information on Service Contract with EDI for Maintenance of Lagoon Aeration Membranes (4 pages)
16. Report of June 12, 2013 MDNR Inspection (8 pages)
17. Lift Stations and Status Information
18. Collection System Inspection and Rehabilitation Information (5 pages, including two 11' x 17')
19. EPA Sample Analysis Results for ASR #6723; Charleston Lagoon CSI (7 pages)


ATTACHMENT 1a
Lagoons
220
215
N
N Main St
Cleveland St
Sherman St
State St
E Commercial St
E Cypress St
State St
Warde Rd
62
Charleston
62
Vine St
S Elm St
S Grand Ave
Helena St
S 5th St
S 6th St
S 8th St
S 9th St
E Iron Banks Rd
UU
57
Elm St
Oak St
Plant Rd
Drake St
323
325
57
60
10
Hwy 60
Google
Exxon

ATTACHMENT 1b

ATTACHMENT 2

Charleston Wastewater Lagoon
NPDES Inspection; March 3, 2015

Digital photos

Taken by Pete Green, EPA Region VII

1. Primary lagoon cell (NW)

2. Influent sampling point in primary cell (with EPA sampler and pH meter) (SW)

3. Blowers for primary cell (ENE)

4. View of Cell #2 (NNE).

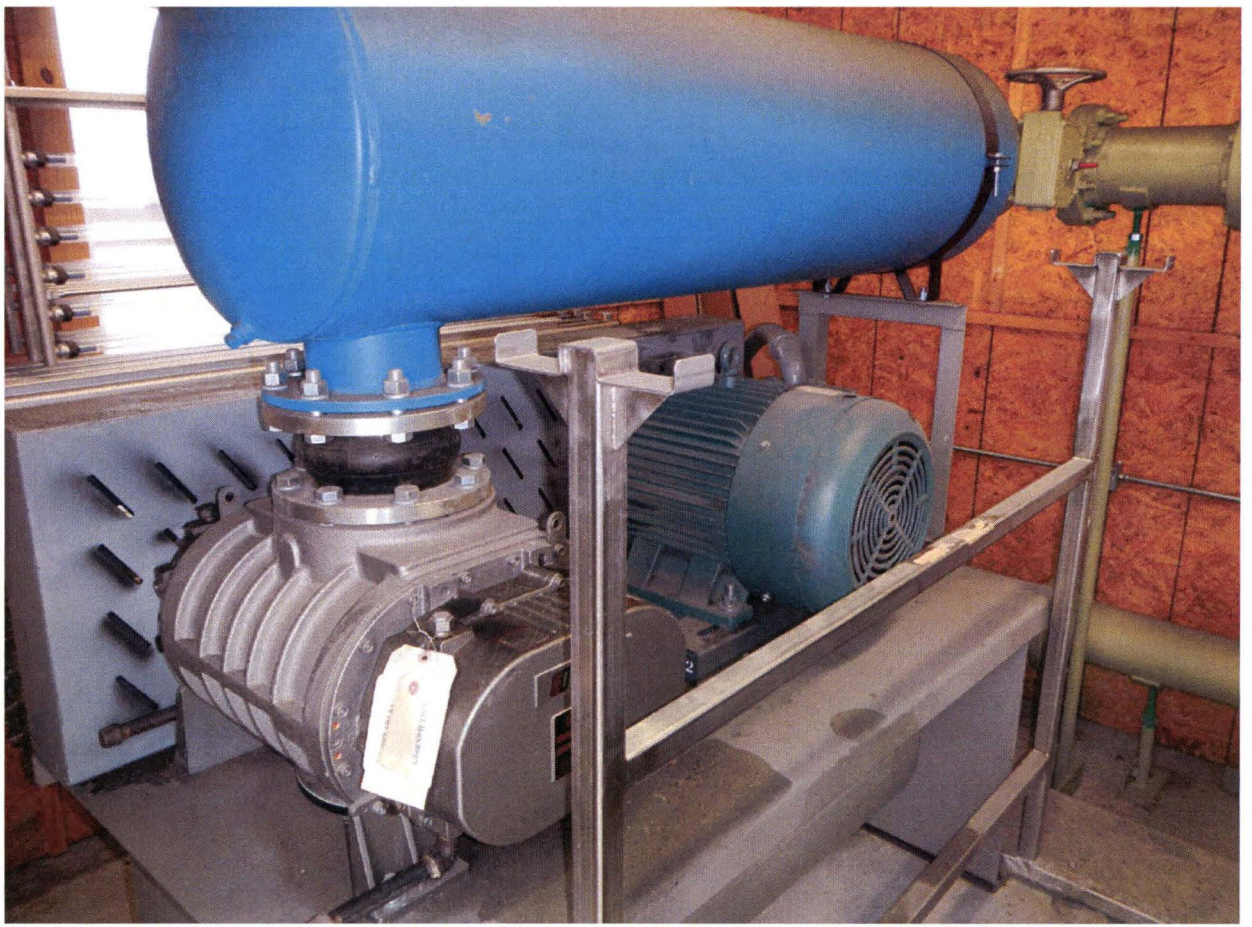
5. Cell #2 (ENE)

6. Cell #2 (ESE)

7. Blowers for Cells 2 & 3 (NE)

8. Ammonia reduction reactor (N)

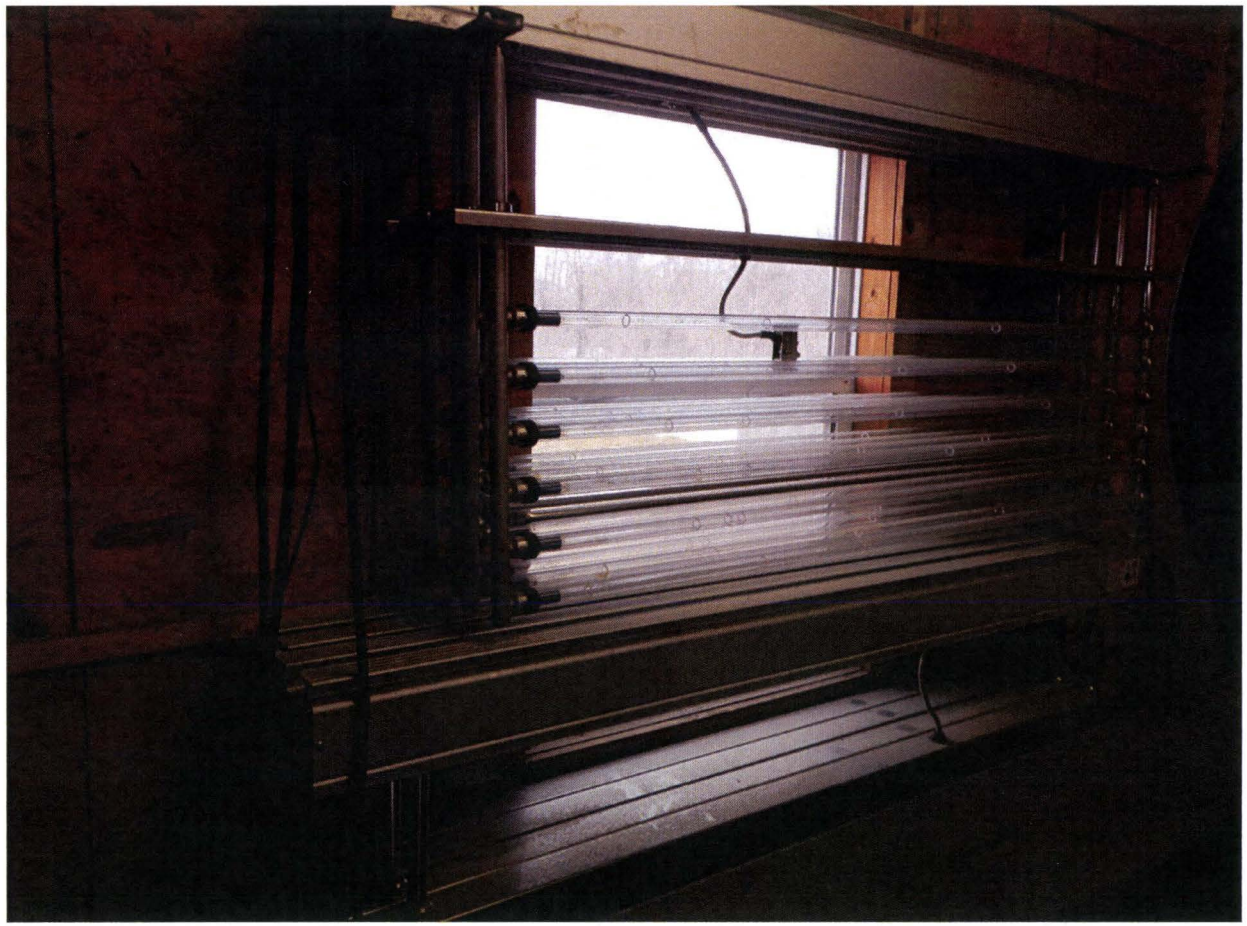
9. New blowers for ammonia reactor tanks (W).



10. One of the three blowers for ammonia reactors (SW).

11. Foam observed on north wall of ammonia reactor tanks (SSE)

12. Ultraviolet disinfection system (WNW)

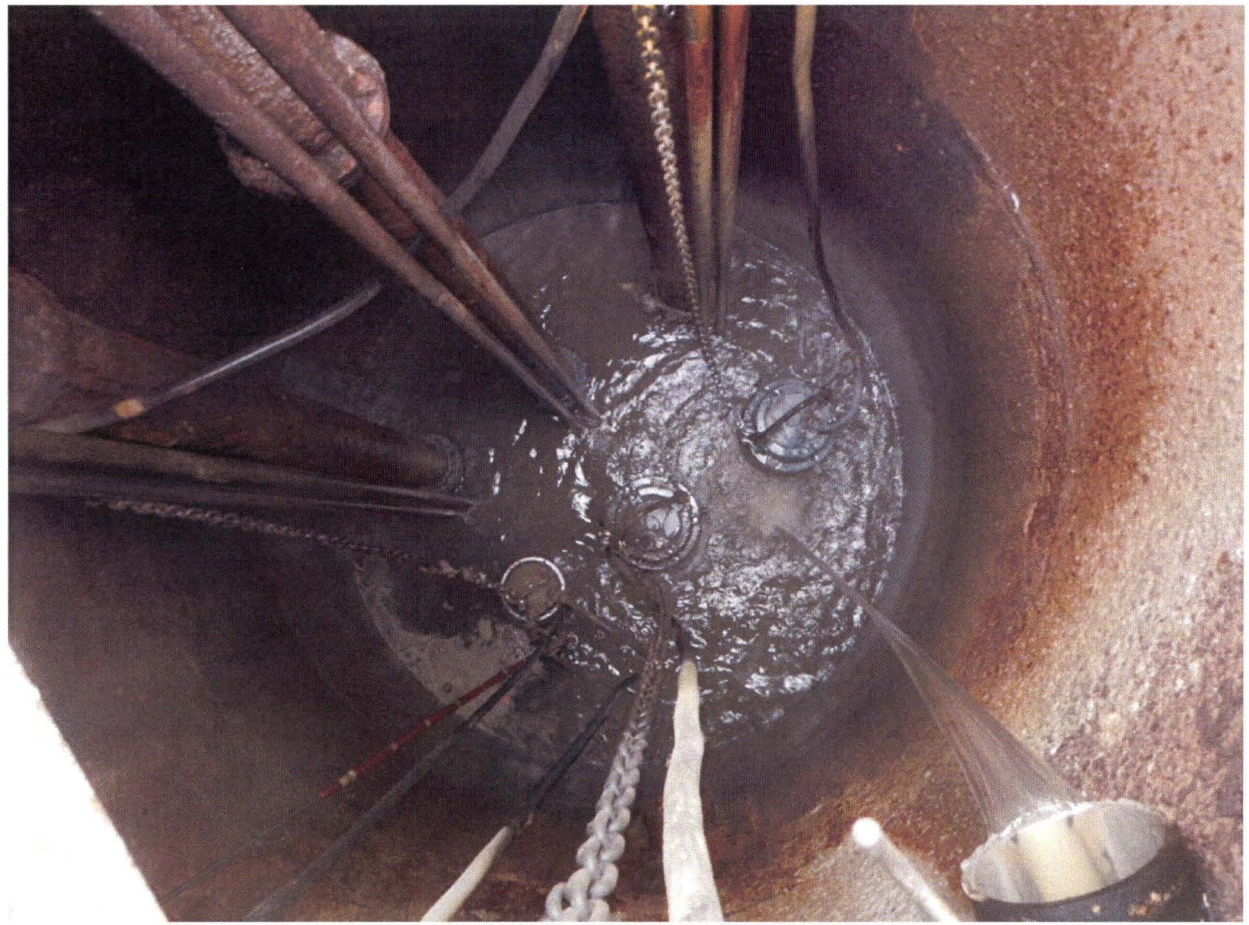


13. Ultraviolet lamps in winter storage in blower building (SW).

14. Effluent weir vault, with V-notch weir (E)

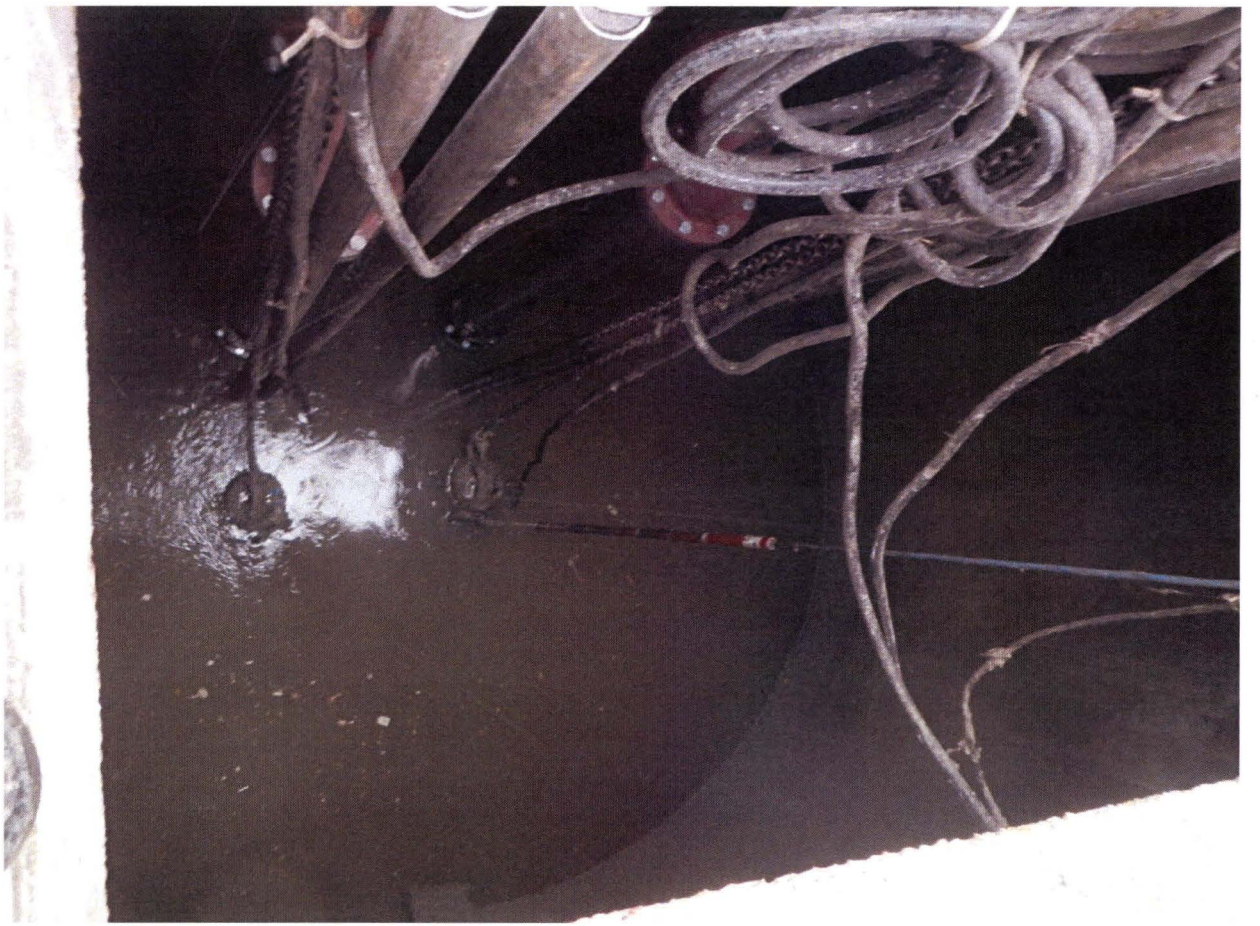
15. Outfall 001, with signs (S)

16. Outfall 001 (S)

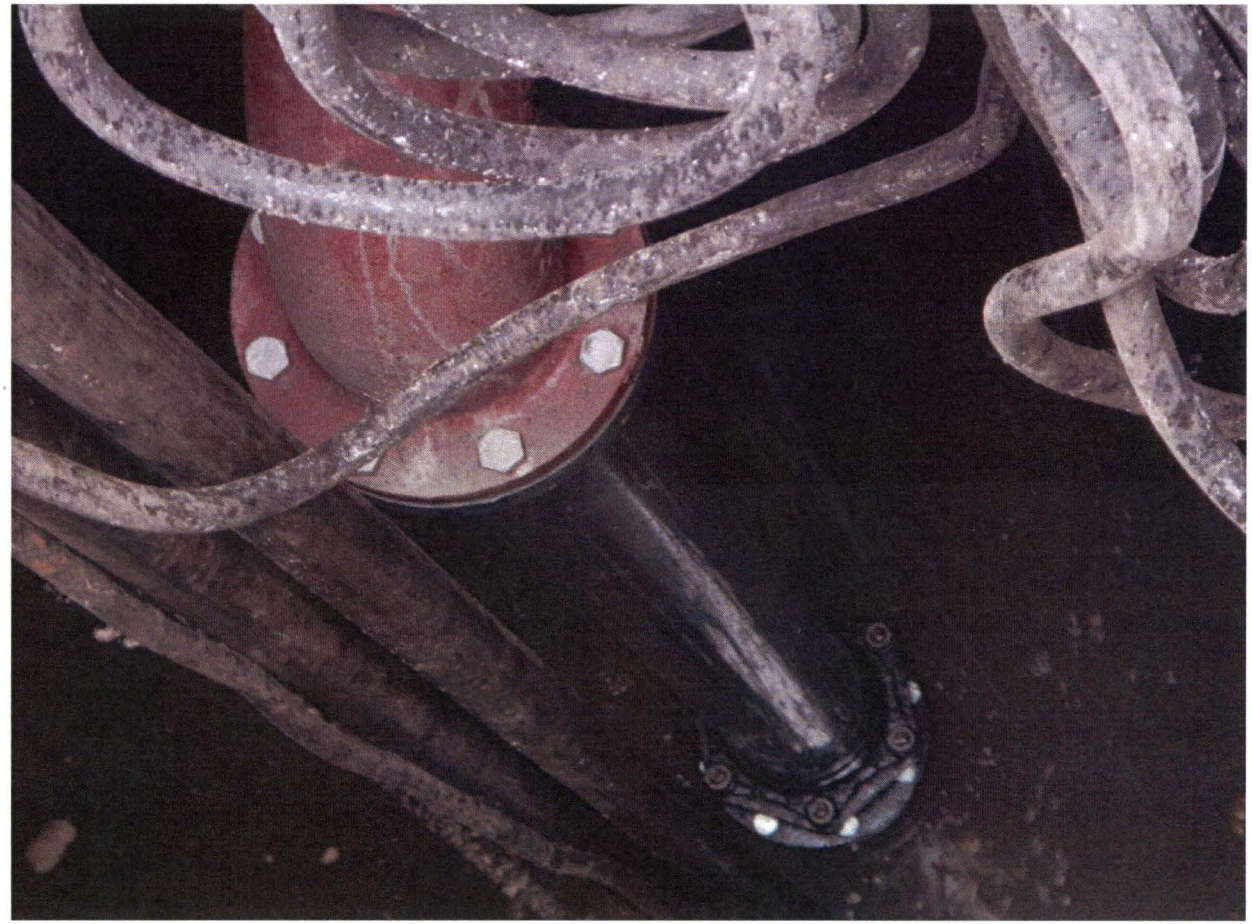


17. Wet well at main lift station.

18. Control panel at 6th St. Lift Station (WSW)



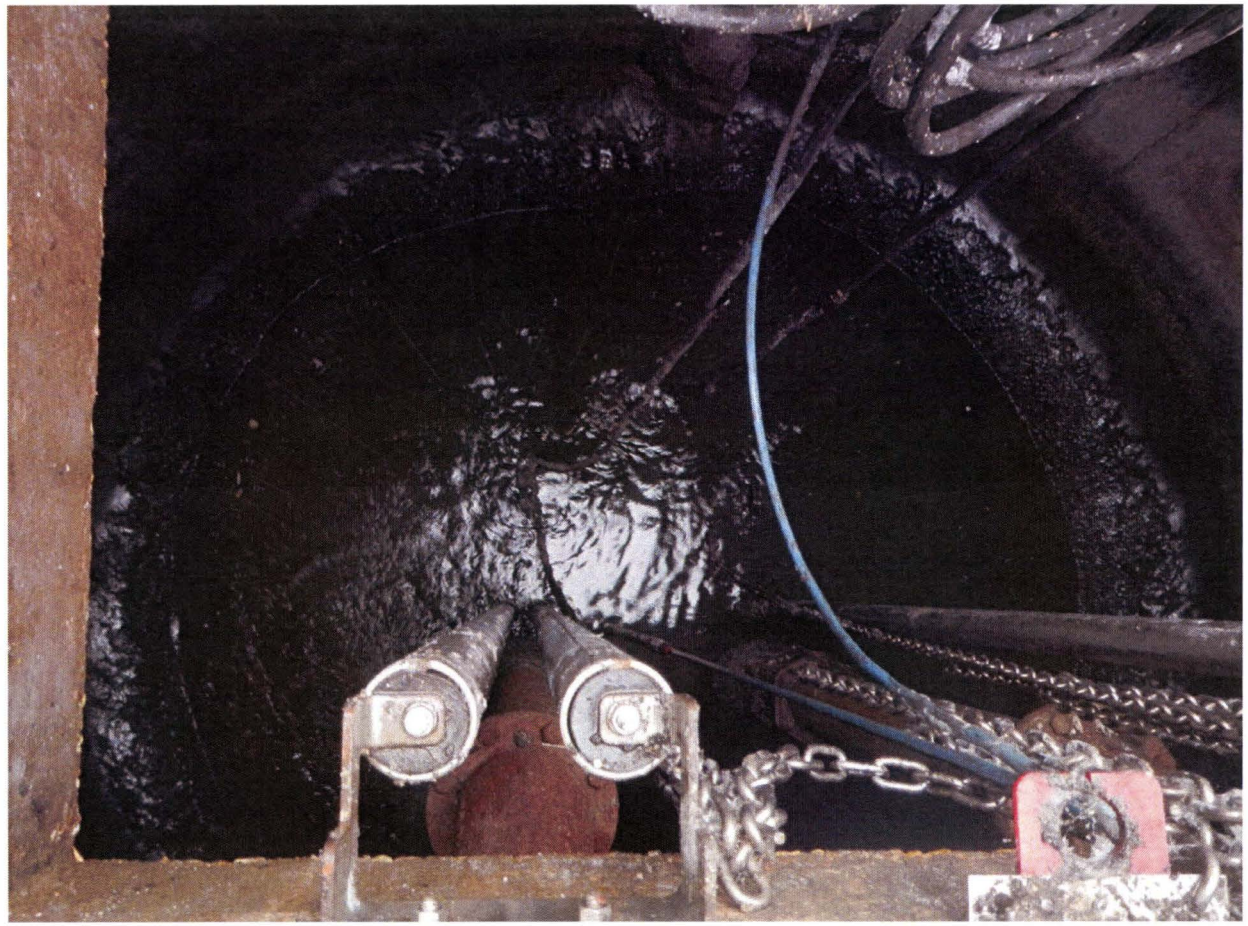
19. Wet well at Sixth Street lift station (with new floor and shaft installed yesterday)



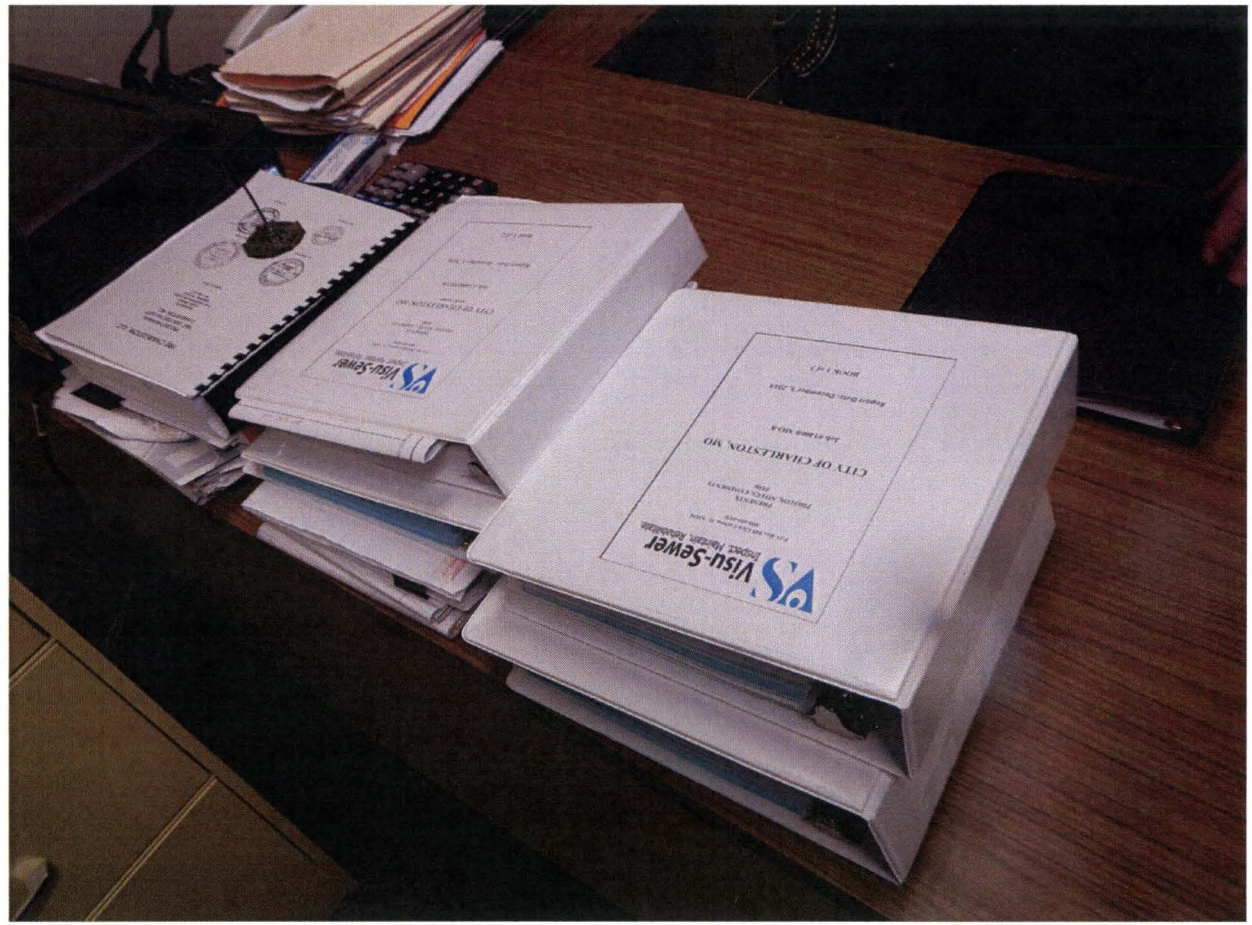
20. Close-up of new pipe installed at 6th St. Lift Station.

21. Old pipes removed from 6th St. wet well (NW)

22. New control panel at 7th St. Lift Station (W)



23. Wet well at 7th St. lift station.



24. 2014 smoke test reports in Mr. Harris' office.

ATTACHMENT 3

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
JANUARY 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F (C)	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	TIME TCM PC
1														
2														
3	.937	7.21	108	108	14.8	7.62	6.26	4	4.68	.87	10.52		PC	5.4
4	.917	7.01			15.2	7.69							PC	5.7
5	.937	7.22			15.6	7.63							PC	6.1
6	.956	7.04			15.4	7.77				.77	10.43		PC	6.1
7														
8														
9	.898	7.02	36.9	110	16.1	7.83	7.36	3	6.14	.86	9.86		PC	7.8
10	.937	7.04			15.2	7.65							PC	8.1
11	.937	7.25			15.4	7.60						R	PC	8.3
12	.917	6.87			15.6	7.93							PCS	7.2
13	.917	6.91			15.4	7.85				.56	9.45		PC	7.3
14														
15														
16														
17	.917	6.89	43.7	277	15.5	7.65	8.39	4	7.86	.87	11.05	R	PC	7.4
18	1.331	7.13			15.1	7.69							PC	7.4
19	1.125	7.19			13.5	7.57							PC	6.9
20	1.125	7.18			12.6	7.64				2.53	9.97		PC	6.0
21														
22														
23	1.777	7.24	100	32	13.6	7.70	9.05	4	8.45	1.98	9.81	R	PC	6.0
24	.917	7.14			14.3	7.83							PC	7.1
25	1.331	6.86			14.5	7.65						R	PC	7.3
26	1.331	6.92			14.7	7.61							PC	7.6
27	1.125	6.97			14.1	7.65				.24	10.05		PC	7.8
28														
29														
30	.898	7.22	42.5	37	14.6	7.68	13.8	8	9.48	.52	10.43		PC	7.4
31	.937	7.23			14.5	7.71							PC	7.5
No.of Samp.	20	20	5	5	20	20	5	5						20
Tot of Samp.	24.3		330	564			44.9	23						147.9
Monthly Avg.	1.217		66	112.8			8.97	4.6						7.4
Daily Max.	1.777	7.25	108	277	16.1	7.93	13.8	8						8.3
Daily Min.	.898	6.86	36.9	32	12.6	7.60	6.26	3						6.0
Max 7/ Avg.	1.576													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

MO 780-1306 (8-02)

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
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30									
31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	Lab.	573 204-8817	1-31-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper.	573-6833325	1-31-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston 204 N. Main St.	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall - 204 N. Main Charleston MO, 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20 12	Due by July 28th,20___	Due by October 28th,20___	Due by January 28th,20___
☒	☐	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	5736833325	Environmental Analysis South	573-204-8817

		PERMITTED FINAL LIMITS			OUTFALL 001			
PARAMETER	UNITS	DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE 01-03-12 TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
Cyanide, Amenable to Chlorination	~~ug/L~~	*		*	0.005 mg/L CN	01-17-12	Grab	Lachat CN2/Sm-4500 CN G
Arsenic, TR	ug/L	*		*	< 15 ug/L	1-6-12	Grab	EPA 200.7 Rev. 4.4
Beryllium, TR	ug/L	*		*	< 1 ug/L	1-6-12	Grab	EPA 200.7 Rev. 4.4
Cadmium, TR	ug/L	*		*	< 3 ug/L	1-5-12	Grab	SM-3111 B99
Chromium (III), TR	ug/L	*		*	< 5 ug/L	1-5-12	Grab	SM-3500-Cr B01
Chromium (VI), TR	ug/L	*		*	< 5 ug/L	1-5-12	Grab	SM-3500-Cr B01
Iron, TR	ug/L	*		*	698 ug/L	1-3-12	Grab	SM 3111 B99
Mercury, TR	ug/L	*		*	< 0.2 ug/L	1-18-12	Grab	SM-3112-B99
Nickel, TR	ug/L	*		*	< 10 ug/L	1-05-12	Grab	SM3111 B-99
Selenium, TR	ug/L	*		*	< 10 ug/L	1-06-12	Grab	EPA 200.7 Rev. 4-4
Silver, TR	ug/L	*		*	< 5 ug/L	1-10-12	Grab	SM 3111 B99
Thallium, TR	ug/L	*		*	< 20 ug/L	1-06-12	Grab	EPA 200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	1-31-12	5736833325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	1-31-12	573 683 3325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

Attachment 3 Page 3 of

WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
February 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☑ GPD ☐ INF. OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	
1	.917	7.21			7.6	7.67							PC	1
2	.937	7.07			7.3	7.64							PC	14
3	.937	7.32			7.5	7.91							PC	1
4														
5														
6	1.333	7.08	33.1	40	10.2	7.87	13.2	7	9.02	1.31	10.41	X	PC	15
7	1.333	7.21			10.2	7.81							PC	15
8	.937	7.26			9.5	7.79							PC	14
9	.937	7.20			8.4	7.84							PC	15
10	.917	6.90			8.0	7.64				.23	10.06		PC	14
11														
12														
13	1.333	7.00	10.5	49	4.4	7.77	7.37	9	9.30	1.27	12.15		PC	11
14	.937	7.09			4.8	7.65							PC	12
15	.917	6.83			5.1	7.87							PC	13
16	.937	9.91			6.7	7.73							PC	14
17	.956	7.03			7.2	7.61				.87	11.37		PC	14
18														
19														
20														
21	1.333	6.87	172	62	7.5	7.71	14	10	9.16	.91	11.20		PC	14
22	.937	7.13			8.8	7.84							PC	15
23	.937	6.87			10.7	7.86							PC	14
24	.937	6.95			10.1	7.92				.24	11.12		PC	14
25														
26														15
27	.937	7.21	123	88	11.3	7.85	30.4	9	8.57	.86	10.23		PC	17
28	1.333	7.12			13.6	7.29							PC	15
29	1.551	6.79			16.7	7.93				.23	11.22		PC	
30														
31														
.of Samp.	20		4	4			4	4						20
: of Samp.	21.2		433.1	239			69.97	35						290
nthly Avg.	1.064		108.2	59.75			16.2	8.75						14
ly Max.	1.551	7.32	172	88	13.6	7.92	30.4	10						17
ly Min.	.917	6.83	33.1	40	4.4	7.61	13.2	7						11
: 7/ Avg.	1.310													

OTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

780-1506 (8-02)

Attachment 3 Page 4 of

Attachment 3 Page 5 of 87

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO .mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
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3									
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1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	Lab.	573-204-8817	2-29-12
REPORT APPROVED BY	TITLE	PHONE #	DATE
Allen Rodgers		573-683-3325	2-29-12

MO 780-1306 (6-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
MARCH 2012	001	MO-0120081	AIR LAGOON

	INFLUENT						EFFLUENT								
DAY	FLOW: MGD ☒ GPD ☐ INF. OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F ©	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	°C ☒ °F ☐ TC
1	.937	6.85			15.4	7.88				.81	11.31		PC	11.1
2	.956	7.12			15.4	7.91							PC	10.5
3														
4														
5	.898	6.95	135	102	15.4	8.77	40.7	20	7.09	.26	11.13		PC	11.1
6	1.228	7.08			14.5	8.39						X	PC	11.8
7	.937	7.03			14.7	8.64							PC	10.7
8	1.125	6.89			14.1	8.53						X	PC	10.8
9	1.570	6.59			15.7	8.38				.23	11.57		PC	11.9
10														
11														
12	1.777	7.07	48.3	35	15.7	7.87	12.6	26	5.51	1.04	9.88	Y	PC	14.5
13	1.570	7.09			16.1	8.17							PC	16.0
14	1.777	7.10			16.8	8.07							PC	17.1
15	1.331	7.25			17.9	7.66							PC	17.2
16	2.01	7.28			16.8	7.60				3.75	7.55		PC	17.7
17														
18														
19	1.777	6.81	31.7	164	17.1	7.48	6.17	14	5.32	.15	5.12		PC	21.6
20	1.777	7.19			18.4	7.29							PC	21.1
21	2.01	7.01			18.5	7.24							PC	21.4
22	2.01	6.89			17.6	7.45				1.18	5.21	X	PC	19.5
23	2.268	7.27			17.5	7.29								20.2
24														
25														
26	1.331	7.11	52	40	18.2	7.41	12.8	7	6.58	.89	5.41		PC	19.3
27	1.331	7.18			17.3	7.48							PC	19.8
28	1.570	7.20			18.1	7.31							PC	19.5
29	1.125	7.13			19.5	7.36							PC	21.1
30	1.125	7.20			18.8	7.40			6.65	5.05			PC	22.3
31														
# of Samp.	22		4	4			4	4						22
# of Samp.	32.4		26.7	341			72.27	24.5						36.0
Monthly Avg.	1.5		166.8	85.25			18.06	6.12						16.7
Daily Max.	2.68	7.28	135	164	19.5	8.77	40.7	26						22.3
Daily Min.	.898	6.59	48.3	35	14.1	7.24	6.17	7						10.7
Total/ Avg.	1.755													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

780-1306 (8-02)

Attachment 3 Page 6 of

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
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31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	Lab	573-204 8817	3-30-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper.	573-683-3325	3-30-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
HARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
APRIL 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp °C
1														
2	1.331	7.28	56.7	45	19.4	7.62	8.48	7	8.78	.92	5.79		PC	23.4
3	1.331	7.16			19.5	7.67							PC	23.4
4	1.331	7.28			19.1	7.54							PC	23.2
5	1.331	7.06			19.1	7.65				.79	6.16		PC	23.7
6														
7														
8														
9	1.125	6.74	57.0	31	18.8	7.46	12.3	13	9.82	.97	8.79		PC	18.8
10	1.144	7.13			17.5	7.55							PC	19.0
11	.937	6.85			17.4	7.65							PC	18.5
12	.917	7.21			16.0	7.56							PC	16.0
13	.878	7.40			17.1	8.19				2.83	12.71		PC	18.2
14														
15														
16	.956	7.21	59	93	16.8	7.65	18.2	18	8.31	.41	8.61		PC	16.5
17	.937	7.31			16.8	8.22							PC	16.5
18	1.125	7.25			18.2	8.12							PC	18.7
19	.917	7.20			19.4	8.33							PC	20.4
20	1.125	7.11			17.8	8.21				.69	8.41		PC	18.7
21														
22														
23	.898	7.42	105	66	16.4	8.57	6.1	19	8.92	.55	11.10		PC	17.2
24	8.78	7.24			18.8	8.35							PC	17.2
25	9.37	6.97			20.9	8.78							PC	17.1
26	1.125	7.22			19.4	8.89							PC	17.2
27	1.133	7.25			19.5	8.74							PC	18.5
28													PC	17.8
29														
30	.917	7.31			18.3	8.78							PC	21.8
31														
# Samp.	20		4	4			4	4						20
Sum of Samp.	21.481		277	235			45.08	57						382
Monthly Avg.	1.074		69.42	58.75			11.27	14.25						19.1
Max.	1.333	7.42	105	93	20.9	8.89	18.2	19						23.7
Min.	.878	6.74	56.7	31	16.4	7.46	6.1	7						16.5
7/ Avg.	1.276													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

Attachment 3 Page 9 of 82

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
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31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
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9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	LAb	573 204-8817	4-30-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rustgus	Oper.	5736833325	4 30-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston 204 N. Main St	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall - 204 N Main Charleston MO 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20____	Due by July 28th,20 12	Due by October 28th,20____	Due by January 28th,20____
☐	☒	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	573-683-3325	Environmental Analysis South	573-204-8817

OUTFALL 001

PARAMETER	UNITS	PERMITTED FINAL LIMITS			DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG				
Cyanide, Amenable to Chlorination	ug/L	*		*	< 5 ug/L	4/19/12	Grab	Lachat CN2/5m-4500CNG
Arsenic, TR	ug/L	*		*	< 15 ug/L	4/17/12	Grab	EPA-200.7-Rev. 4.4
Beryllium, TR	ug/L	*		*	< 1 ug/L	4/17/12	Grab	EPA-200.7 Rev 4.4
Cadmium, TR	ug/L	*		*	< 3 ug/L	4/19/12	Grab	SM-3111 B-99
Chromium (III), TR	ug/L	*		*	< 3 ug/L	4/19/12	Grab	SM-3111 B-99
Chromium (VI), TR	ug/L	*		*	< 5 ug/L	4/19/12	Grab	SM-3111 B-99
Iron, TR	ug/L	*		*	804 ug/L	4/19/12	Grab	SM-3111 B-99
Mercury, TR	ug/L	*		*	0.2 ug/L	4/25/12	Grab	SM-3112 B99
Nickel, TR	ug/L	*		*	< 10 ug/L	4/17/12	Grab	SM-3111 B99
Selenium, TR	ug/L	*		*	< 10 ug/L	4/17/12	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*		*	< 5 ug/L	4/19/12	Grab	SM-3111 B-99
Thallium, TR	ug/L	*		*	< 20 ug/L	4/19/12	Grab	EPA 200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	4-30-12	573-683-3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	**DATE**	**PHONE NUMBER**	**EMAIL ADDRESS:**
Allen Rodgers	4-30-12	5736833325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

Attachment 3 Page 20 of

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
MAY 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F (C)	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp °C
1	.937	7.26	111	82	18.9	8.76	20	16	7.92	.58	10.47		PC	21.5
2	.898	7.15			19.2	8.64							PC	22.5
3	.937	7.02			18.4	8.78							PC	21.0
4	1.027				21.4	8.47				3.21	10.21		PC	21.5
5														
6														
7	1.331	7.25	152	271	20.2	7.93	29.8	36	0.336	1.31	10.24	X	PCR	21.4
8	.956	7.10			20.3	8.41							PC	22.4
9	.937	7.31			21.4	7.75							PC	23.9
10	.898	7.24			21.7	9.08							PC	24.1
11	.937	6.89			23.1	7.84				.86	10.31		PC	23.1
12														
13														
14	.917	7.21	68.8	110	22.4	7.93	11.4	21	0.143	.89	9.55		PC	23.6
15	.937	7.34			22.6	8.67							PC	23.3
16	.937	7.20			24.1	8.51							PC	23.6
17	.898	7.13			23.5	8.62							PC	23.4
18	.917	7.23			22.5	9.10				1.31	8.94		PC	23.1
19														
20												X		
21	1.125	6.93	108	96	23.4	8.86	7.73	27	0.538	.17	8.88		PC	23.4
22	.898	7.12			23.1	8.46							PC	23.8
23	.937	6.92			23.4	8.65							PC	23.5
24	.937	7.20			23.6	8.54							PC	23.0
25	.956	7.33			24.1	8.84				2.15	9.13		PC	26.1
26														
27														
28														
29	.917	7.27	53	104	23.1	8.61	9.44	24	0.050	.81	8.41		PC	24.1
30	.898	7.20			21.3	8.67							PC	27.1
31	.917	6.86			21.6	8.55						X	PCR	26.5
No.of Samp.	22		5	5			5	5						22
Tot of Samp.	21.049		492.8	663			78.37	124						520
Monthly Avg.	.956		98.56	132.6			15.7	24.8						23.6
Daily Max.	1.331	7.34	111	271	24.1	9.10	29.8	36						28.1
Daily Min.	.898	6.86	53	82	18.4	7.75	7.73	16						21.0
Max 7/ Avg.	1.038													

QUE SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
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6									
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31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis South	LAb	573-204-8817	5-31-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper.	573 6833325	5-31-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
June 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	TEMP ~~TIME~~ °C
1	1.570	6.92			20.4	8.61				.84	7.15		PC	22.5
2														
3														
4	.846	6.93	138	85	23.8	7.86	6.93	9	0.736	.15	6.93	X	PC	26.0
5	1.777	7.30			21.0	7.47							PC	25.3
6	1.125	7.24			22.3	7.58							PC	23.8
7	.937	7.05			21.5	7.89							PC	24.1
8	.937	6.96			21.7	7.57				.34	7.34		PC	25.2
9														
10														
11	.937	7.10	169	74	22.5	7.98	10.5	11	0.454	.15	6.41	X	PC	25.3
12	1.333	6.89			21.5	7.65							PC	23.1
13	.898	7.31			23.4	8.78							PC	25.1
14	.937	7.05			25.4	8.63							PC	25.4
15	.937	7.21			22.5	8.24				.96	7.69		PC	25.9
16														
17														
18	.937	7.20	150	106	22.5	8.58	8.94	6	0.204	1.09	7.96		PC	27.2
19	.937	7.28			25.8	8.50							PC	27.8
20	.937	7.38			25.6	8.26							PC	28.0
21	.956	7.24			24.7	8.39							PC	28.0
22	.917	7.34			25.0	8.18				.26	7.96		PC	28.1
23														
24														
25	.947	7.28	170	84	21.5	8.18	7.47	5	0.058	.26	8.20		PC	29.3
26	.937	7.23			24.4	8.31							PC	31.4
27	.956	7.05			26.1	8.25							PC	28.2
28	.898	6.86			25.5	7.85							PC	29.1
29	1.570	7.22			25.1	8.05				.97	8.09		PC	29.3
30														
31														
o.of Samp.	21		4	4			4	4						21
ot of Samp.	20362		627	349			33.84	31						589.1
lonthly Avg.	.970		156	87.25			8.46	7.75						28.0
aily Max.	1.777	7.36	170	106	26.1		10.5	11						31.4
aily Min.	.846	6.86	138	74	20.4		6.93	5						22.5
ax 7/ Avg.	1.329													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM.

O 780-1306 (8-02)

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
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1. Fill out one copy of report each month and mail in monthly for each treatment facility.
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4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
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8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	LAB	573-204-8817	6-29-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
[signature]	Pres.	5236833325	6-29-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
JULY 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☒ GPD ☐ INF. OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp. C
1														
2	1,195	7.08	128	51	27.5	8.24	7.04	3	<0.050	.87	8.12		PC	29.1
3	1,222	7.01			26.7	8.25							PC	30.7
4														
5	1,127	7.10			27.5	8.14				.88	7.95		PC	31.7
6	1,227	6.89			27.8	7.82							PC	32.2
7														
8														
9	1,331	7.14	48.4	64	25.9	8.02	7.73	8	<0.050	.54	7.97		PC	30.9
10	1,231	7.05			26.4	8.03							PC	31.0
11	1,018	7.22			26.0	8.13							PC	28.1
12	1,035	7.04			28.1	8.04							PC	31.0
13	1,258	7.28			23.7	8.01				.78	8.12		PC	29.9
14														
15														
16	1,258	7.26	137	77	25.4	8.09	6.95	20	0.335	.51	8.21		PC	30.4
17	1,235	7.09			27.4	8.10							PC	30.4
18	1,213	7.07			26.7	8.31							PC	30.1
19	1,209	7.30			27.5	8.32							PC	31.2
20	1,184	7.03			22.0	8.49				.51	8.16		PC	31.4
21														
22														
23	1,231	7.02	167	67	23.0	8.26	7.73	19	<0.050	.93	8.01		PC	31.5
24	1,163	6.89			23.1	8.09							PC	31.2
25	1,145	7.25			23.7	8.10							PC	32.0
26	1,101	7.05			24.1	7.98							PC	32.0
27	1,183	6.87			22.5	8.04				.23	7.98		PC	30.5
28														
29														
30	1,141	2.07	55.2	58	27.1	8.00	6.95	32	<0.05				PC	29.1
31	1,259	7.05			26.4	8.01				1.29	8.05		PC	29.5
# of Samp.	21		5	5			5	5						21
# of Samp.	24,966		535.6	317			36.4	82						643.9
Monthly Avg.	1,188		107.12	63.4			7.28	16.4						30.6
Day Max.	1,331		167	77	28.1	8.31	7.73	32						32.2
Day Min.	1,018		48.4	51	22.0	7.82	6.95	3						28.1
7 Day Avg.	1,253													

SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM.

780-1306 (8-02)

8-13-12 8-14-12

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
4									
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31									

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3. Reports must be signed by whoever performed tests and by an appropriate official.
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9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	Lab	573-204-8817	7-31-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Owner	5736833325	7-31-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON **MO-0120081** **MISSISSIPPI COUNTY**	Owner Address: CITY OF Charleston 204 N. MAIN ST	Address Change for Owner: ☐ Billing ☐	Facility Address: 204 N MAIN St Charleston MO 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20___	**Due by July 28th,20___**	**Due by October 28th,20 12**	**Due by January 28th,20___**
☐	☐	☒	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	573 683 3325	ENVIRONMENTAL Analysis South	573 204 8817

PARAMETER	UNITS	PERMITTED FINAL LIMITS			OUTFALL 001		SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE / TIME	ANALYSIS DATE		
					07-2-12			
Cyanide, Amenable to Chlorination	ug/L	*		*	<0.005 mg CN/L	7-16-12	Grab	Lachat CN2/5m-4500 CNG
Arsenic, TR	ug/L	*		*	<15 ug/L	7-10-12	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*		*	<1 ug/L	7-10-12	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*		*	<3 ug/L	7-23-12	Grab	SM-3111 B-99
Chromium (III), TR	ug/L	*		*	<5 ug/L	7-23-12	Grab	SM-3111B/3500-Cr B-01
Chromium (VI), TR	ug/L	*		*	<0.005 ug/L	7-02-12	Grab	SM-3500-Cr B-01
Iron, TR	ug/L	*		*	<20 ug/L	7-24-12	Grab	SM-3111 B-99
Mercury, TR	ug/L	*		*	<0.2 ug/L	7-18-12	Grab	SM-312 B-99
Nickel, TR	ug/L	*		*	<10 ug/L	7-23-12	Grab	SM-3111 B-99
Selenium, TR	ug/L	*		*	<10 ug/L	7-10-12	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*		*	<5 ug/L	7-23-12	Grab	SM-3111 B-99
Thallium, TR	ug/L	*		*	<20 ug/L	7-10-12	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers Oper.	7-31-12	5736833325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	**DATE**	**PHONE NUMBER**	**EMAIL ADDRESS:**
Allen Rodgers	7-31-12	573 683 3325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
AUGUST 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp °C
1	1,159,475	7.03			27.4	8.01				.81	7.84		PC	30.7
2	1,214,703	7.05			27.3	8.05							PC	30.8
3	1,100,550	7.07			27.5	8.03							PC	29.3
4														
5														
6	1,183,430	7.17	181	67	25.8	8.19	6	16	0.184	1.12	8.06		PC	29.9
7	1,083,430	7.22			25.4	8.32							PC	28.7
8	1,075,466	7.06			26.1	8.16							PC	30.0
9	1,535,101	6.90			27.5	8.08							PC	30.3
10	1,573,164	7.10			25.4	8.05				.82	7.91		PC	30.1
11														
12														
13	905,343	6.83	114	58	26.9	8.32	6.26	20	<0.050	.88	8.91		PC	26.9
14	1,078,330	7.05			26.7	8.05							PC	25.9
15	1,167,473	6.89			26.3	8.26							PC	26.1
16	1,175,880	6.81			26.5	8.15							PC	26.5
17	1,173,889	6.75			26.1	8.25				.93	8.01		PC	25.8
18														
19														
20	1,145,856	6.60	188	94	25.8	8.46	7.27	24	0.074	.30	8.57		PC	25.9
21	1,119,806	6.64			26.3	8.51							PC	26.0
22	1,117,641	6.97			25.0	8.25				--			PC	26.0
23	1,080,995	6.82			26.3	8.61							PC	26.6
24	1,050,936	7.23			25.7	8.74				1.05	8.43		PC	26.9
25														
26														
27	1,150,431	7.21	174	112	25.6	8.58	9.62	21	<0.050	.98	9.42		PC	27.8
28	898,273	7.27			25.8	8.61							PC	26.1
29	1,146,151	6.89			26.1	8.81							PC	25.8
30	1,137,580	7.24			26.5	8.45							PC	27.3
31	984,375	7.05			26.8	8.69				.81	8.44		PC	27.4
.of Samp.	23		4	4			4	4						23
t of Samp.	30,592,171		657	331			29.13	81						638
nthly Avg.	1,330,964		164.25	82.75			7.288	20.25						27.7
ily Max.	1,573,164		188	112	27.5	8.81	9.62	24						30.8
ily Min.	898,273		114	58	25.0	8.01	6	16						25.8
x 7/ Avg.	1,286,537													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

780-1306 (8-02)

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
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1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analyiss	LAb	573-2048817	8-31-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper	573 683 3325	8-31-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
SEPTEMBER 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/ L	SUSP. SOLIDS mg/ L	TEMP ° F (C)	PH UNITS	BOD mg/ L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp °C
1														
2														
3														
4	1,122,781	6.29	532	43	27.9	8.19	7.03	22	<0.050	.18	8.34		PC	27.4
5	1,243,305	6.81			27.1	8.32						X	PC	27.5
6	1,397,993	7.23			21.0	8.15						X	PC	27.2
7	1,430,415	7.10			25.5	8.31				1.15	8.61	X	PC	26.4
8														
9														
10	1,045,315	7.21	161	132	25.6	8.74	8.26	29	<0.050	.19	8.36		PC	25.1
11	1,087,908	6.89			25.4	8.56							PC	25.0
12	1,502,408	7.13			22.5	8.65							PC	25.4
13	1,408,519	7.02			25.4	8.29							PC	25.2
14	1,238,687	7.05			25.5	8.71				.81	8.09		PC	25.0
15														
16														
17	1,618,347	6.82	179	90	24.7	8.65	6.28	29	<0.050	1.19	8.03	X	PC	23.0
18	1,766,658	7.13			25.1	8.21							PC	24.8
19	1,009,795	7.22			23.8	8.22							PC	22.1
20	962,832	7.24			23.5	8.51							PC	21.9
21	1,161,085	7.19			22.5	8.41				.94	8.65	X	PC	21.1
22										--				
23														
24	1,157,482	7.21	114	67	21.5	8.29	7.29	31	<0.050	.64	8.41		PC	21.1
25	1,216,615	7.26			21.3	8.71							PC	20.6
26	1,334,311	7.22			23.5	8.85						X	PC	22.0
27	1,345,917	7.05			21.8	8.65							PC	21.5
28	1,585,927	7.29			22.4	8.33				.86	8.17	X	PCR	21.5
29														
30														
31														
o.of Samp.	19		4	4			4	4						19
ot of Samp.	23,622,620		507.2	332			28.86	111						453.8
lonthly Avg.	1,243,296		126.8	83			7.21	27.75						23.8
aily Max.	1,766,658		179	132	27.9	8.85	8.26	31						27.5
aily Min.	962,832		532	43	21.3	8.19	6.28	22						20.6
ax 7/ Avg.	1,129,679													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
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9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY: Environmental Analysis	TITLE: Lab	PHONE #: 573-204-8817	DATE: 9-28-12
REPORT APPROVED BY: Allen Rodgers	TITLE: Oper.	PHONE #	DATE: 9-28-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
OCTOBER 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☑ GPD ☐ INF. OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F (C)	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp °C
1	1,335,435	7.23	180	61	23.1	8.05	8.51	20	0.050	1.21	9.11	X	PC	21.5
2	1,189,607	6.98			22.5	8.31						X	PC	21.0
3	1,092,429	7.31			21.8	7.93							PC	20.0
4	1,090,075	7.21			22.0	8.19							PC	19.0
5	1,122,970	7.34			20.4	8.06							PC	20.4
6														
7														
8														
9	1,091,788	7.28	234	109	19.2	8.16	7.95	22	0.050	.98	9.84		PC	16.7
10	1,010,406	7.21			19.5	8.31							PC	17.5
11	1,282,207	7.23			19.5	8.35							PC	16.8
12	1,256,296	7.05			19.8	8.18						X	PC	17.3
13														
14														
15	1,303,800	7.38	118	44	19.1	8.18	7.67	16	0.050	.14	10.11		PC	18.1
16	1,256,515	6.95			19.9	8.08							PC	18.0
17	1,655,435	7.30			19.7	8.21						X	PC	18.3
18	1,013,557	7.25			19.5	8.21							PC	18.5
19	1,263,858	7.03			19.3	8.09				.85	9.37		PC	19.7
20														
21														
22	1,096,646	7.12	194	68	18.9	8.05	6.56	20	0.050	1.14	10.40		PC	17.4
23	1,080,355	7.05			19.8	8.07							PC	18.6
24	1,080,845	6.86			21.2	8.13							PC	18.5
25	1,083,511	6.99			20.5	8.07							PC	18.6
26	1,140,654	7.21			19.4	8.02				.58	11.24	X	PC	15.9
27														
28														
29	1,106,587	7.10	116	48	19.5	8.25	8.94	20	0.050	.26	10.85		PC	13.4
30	1,029,211	7.21			18.5	8.07							PC	14.5
31	1,016,776	7.29			18.6	8.44				.79	11.23		PC	12.1
# Samp.	22		5	5			5	5						22
# Samp.	22,065,255		842	330			39.63	98						350.6
Daily Avg.	1,002,966		168.4	66			7.93	19.6						15.9
Max.	1,655,435	7.38	234	109	23.1		7.95	22						21.5
Min.	1,010,406	6.95	116	44	19.1		6.56	16						12.1
7 Day Avg.	1,369,071													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM.

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
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COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis South	LAb	573-204-8817	10-31-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper.	573-883-3325	10-31-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall 204 N. Main St Charleston MO

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20___	Due by July 28th,20___	Due by October 28th,20___	Due by January 28th,20 12
☐	☐	☐	☒
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By: Allen Rodgers	Phone: 5736833325	Analyses Performed by (LAB): Environmental Analysis South	Phone: 573 288 8817

PARAMETER	UNITS	PERMITTED FINAL LIMITS			OUTFALL 001		SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE 10-1-12 ~~TIME~~	ANALYSIS DATE		
Cyanide, Amenable to Chlorination	ug/L	*		*	< 5 ug/L	10-15-12	Grab	Lachat CN2/sm 4500CN G
Arsenic, TR	ug/L	*		*	8.12 ug/L	10-17-12	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*		*	< 1 ug/L	10-11-12	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*		*	< 3 ug/L	10-16-12	Grab	Sm-3111 B-99
Chromium (III), TR	ug/L	*		*	5 ug/L	10-18-12	Grab	Sm-3111 B99
Chromium (VI), TR	ug/L	*		*	< 5 ug/L	10-18-12	Grab	Sm-3111B/3500-Cr B-01
Iron, TR	ug/L	*		*	126 ug/L	10-8-12	Grab	SM-3111 B-99
Mercury, TR	ug/L	*		*	0.2 ug/L	10-19-12	Grab	Sm 3112 B99
Nickel, TR	ug/L	*		*	< 10 ug/L	10-16-12	Grab	Sm 3111 B99
Selenium, TR	ug/L	*		*	< 2 ug/L	10-17-12	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*		*	< 5 ug/L	10-08-12	Grab	Sm 3111 B99
Thallium, TR	ug/L	*		*	< 20 ug/L	10-11-12	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	10-31-12	5736833325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	10-31-12	573683-3325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
NOVEMBER 2012	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/ L	SUSP. SOLIDS mg/ L	TEMP °F °C	PH UNITS	BOD mg/ L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp C
1	1,055,801	7.05			18.0	8.13				.86	10.46		PC	12.5
2	1,042,438	6.97			17.8	8.05							PC	12.5
3														
4														
5	1,134,854	7.27	137	96	17.9	8.02	8.08	18	<0.050	.88	11.19		PC	12.4
6	1,085,733	7.05			17.8	8.09							PC	12.1
7	1,076,074	6.89			17.9	8.05							PC	12.5
8	1,057,973	7.20			17.9	8.12							PC	18.9
9	1,142,112	7.26			18.5	8.10				.64	11.57	X	PC	16.3
10														
11														
12	Holiday													
13	1,336,362	7.23	162	67	18.2	8.23	7.39	26	<0.050	.12	10.29	X	PC	12.4
14	1,729,451	7.05			17.5	8.04							PC	13.0
15	1,050,791	7.25			17.8	8.11							PC	10.6
16	1,534,422	7.35			17.0	8.54				.29	11.77		PC	11.2
17														
18														
19	780,954	7.05	181	95	16.8	8.22	6.20	23	<0.050	.15	11.63		PC	11.3
20	1,067,803	7.24			17.4	8.12							PC	13.1
21	1,105,626	7.17			17.9	8.11							PC	12.1
22	Holiday													
23														
24														
25														
26	1,520,780	7.05	119	78	16.9	7.91	7.41	22	<0.050	.81	9.35	X	PC	8.7
27	1,437,007	6.87			17.2	8.09							PC	8.7
28	1,193,725	6.70			17.1	8.44							PC	9.4
29	1,125,004	7.08			16.9	8.53							PC	10.0
30	1,200,068	6.85			17.3	8.36				.96	12.18		PC	10.0
31														
No.of Samp.	19		4	4			4	4						19
Tot of Samp.	19.4		599	336			29.08	89						223
Monthly Avg.	1,022,725		149.75	84			7.27	22.25						11.7
Daily Max.	1,729,451		181	96	18.5	8.53	8.08	26						13.1
Daily Min.	780,954		119	67	16.8	7.91	6.20	18						8.7
Max 7/ Avg.	14,144,5													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM.
MO 780-1306 (8-02)

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
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COMMENTS

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REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper.	573-683-3325	11-30-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
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FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
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	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/ L	SUSP. SOLIDS mg/ L	TEMP °F (C)	PH UNITS	BOD mg/ L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Temp °C
1														
2														
3	786,411	6.99	55.6	49	17.5	8.02	8.50	22	<0.050				PC	12.3
4	1,141,808	7.21			17.3	8.20				.64	11.08	x	PCR	12.8
5	1,183,824	7.22			17.1	8.05							PC	13.0
6	1,112,128	6.88			17.0	8.12							PC	13.0
7	1,313,608	7.20			17.0	8.11				.22	10.09		PC	12.6
8														
9														
10	1,354,273	6.89	142	42	16.8	8.23	22.0	22	<0.050	.53	11.21		PC	12.1
11	1,144,868	7.24			16.9	8.27							PC	13.0
12	1,104,790	7.11			16.7	8.21							PC	10.2
13	1,082,638	7.29			16.1	8.07							PC	9.1
14	1,155,135	7.31			16.0	8.08				.61	12.05		PC	9.1
15														
16														
17	1,159,676	6.75	188	76	16.2	7.92	21.4	20	<0.050	.28	11.33		PC	11.1
18	1,070,498	6.85			16.1	8.03							PC	11.3
19	1,169,605	7.19			17.1	8.10							PC	12.0
20	1,104,493	7.21			16.8	8.18						x	PCR	11.2
21	1,152,988	6.91			16.5	8.31				.50	11.22		PC	10.5
22														
23														
24														
25														
26	1,034,819	7.25	142	68	16.3	8.01	6.51	13	<0.050	1.03	9.31		PCS	8.4
27	1,426,810	7.15			15.6	8.00						X	PCS	4.2
28	1,238,072	7.05			15.1	8.13				.86	12.05	X	PCS	4.7
29														
30														
31	1,352,140	7.31			14.6	8.22				.36	13.75		PC	4.5
Samp.	19		4	4			4	4						19
Samp.	22,063,984		527.6	235			58.41	77						195.1
y Avg.	1,161,256		131.9	58.75			14.6	19.25						10.3
Max.	1,426,090		188	76		8.27	22.0	22						13.0
Min.	786,411		55.6	42		7.92	6.51	13						4.2
Avg.	1,258,384													

SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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18									
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22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	LAB	573-204-8817	12-28-12
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Roesler	Oper.	573683-3325	12-28-12

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
January 2013	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TE~~ Te °C
1														
2	1,265,959	7.65	67.2	58	14.0	8.22	21.5	19	0.050	2.6	14.12		PC	4.6
3	1,276,215	7.50			14.3	8.06							PC	4.6
4	1,135,300	7.42			14.6	7.78				.16	13.99		PC	4.6
5														
6									FORGOT					
7	1,125,126	6.90	65.4	65	14.1	7.75	10.8	21	0.757	.59	14.08		PC	3.9
8	1,201,160	6.91			14.1	8.25							PC	5.4
9	1,234,518	7.03			14.5	7.65							PC	4.5
10	1,579,630	6.89			14.1	7.95						R	PC	5.1
11	1,638,438	7.57			14.5	8.06				.21	12.18		PC	4.9
12														
13														
14	2,018,803	7.12	119	43	13.5	8.35	15.3	19	0.957	.52	11.91	R	PC	3.6
15	1,096,217	7.27			13.8	7.35						RS	PC	4.3
16	1,307,323	7.08			13.5	7.64							PC	4.0
17	1,350,418	6.99			14.0	8.10							PC	4.5
18	1,185,881	7.52			14.5	7.96				.56	13.72		PC	4.0
19														
20														
21														
22	1,209,385	6.96	165	163	13.7	8.27	7.97	18	1.63	.31	14.09		PC	5.2
23	1,205,796	6.99			14.0	8.19							PC	4.9
24	1,233,003	7.10			13.4	7.82							PC	5.2
25	1,240,759	6.87			13.5	8.26				.40	12.51		PC	5.2
26														
27														
28	1,371,846	7.10	154	68	14.0	7.84	10.2	16	2.81	.89	12.00			9.4
29	1,488,323	7.05			14.5	8.21						R	PC	8.2
30	1,863,512	7.25			14.9	7.84						R	PC	9.4
31	1,462,281	7.12			13.7	8.20				.92	11.86		PC	8.5
of Samp.	21		5	5			5	5						21
of Samp.	27,494,883		571	397			66.27	93						113.4
nthly Avg.	1,309,281		114	79.4			13.25	18.6						5.4
y Max.	2,018,803	7.65	165	163	14.6	8.35	21.5	21						5.4
y Min.	1,085,126	6.87	65.4	43	13.4	7.65	5.65	2.10						3.6
7/ Avg.	1,425,277													

PLEASE SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston 204 N. Main	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall 204 N. Main St 63834 Charleston MO

THIS REPORT COVERS THE PERIOD: Please place an "X" in the box beneath the appropriate quarter.

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20 13	Due by July 28th,20___	Due by October 28th,20___	Due by January 28th,20___
☒	☐	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	573-683-3325	ENVironmental Analysis South	573-204-8817

		OUTFALL 001				
PARAMETER	UNITS	PERMITTED FINAL LIMITS: DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
Cyanide, Amenable to Chlorination	ug/L	*		*	<5	1-08-13	Grab	Lachat CA12/5m-4500 CN G
Arsenic, TR	ug/L	*		*	<5	1-11-13	Grab	EPA-200.7 Rev 4.4
Beryllium, TR.	ug/L	*		*	<1.0	1-11-13	Grab	EPA-200.7 Rev 4.4
Cadmium, TR	ug/L	*		*	<3 UG/L	1-04-13	Grab	Sm-3111 B99
Chromium (III), TR	ug/L	*		*	<5 UG/L	1-04-13	Grab	Sm 3500-Cr B-01
Chromium (VI), TR	ug/L	*		*	<5 UG/L	1-02-13	Grab	Sm 3500 B/3500 Cr B-01
Iron, TR	ug/L	*		*	210 UG/L	1-03-13	Grab	Sm 3111 B-99
Mercury, TR	ug/L	*		*	<0.2 UG/L	1-08-13	Grab	Sm-3112 B-99
Nickel, TR	ug/L	*		*	<10 UG/L	1-04-13	Grab	Sm-3111 B-99
Selenium, TR	ug/L	*		*	<5 UG/L	1-11-13	Grab	EPA 200.7 Rev 4.4
Silver, TR	ug/L	*		*	<2 UG/L	1-11-13	Grab	Sm3111 B99
Thallium, TR	ug/L	*		*	5.7 UG/L	1-11-13	Grab	EPA 200.7 Rev 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	1-31-13	573-683-3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	1-31-13	573-683-3326	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

Return form to: Missouri Department of Natural Resources
Southeast Regional Office

* - Monitor and Report

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
FEBRUARY 2013	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	TE °C
1	1,285,357	6.99			13.5	7.69				1.11	12.21		PC	7
2														
3														
4	1,309,131	7.04	111	69	13.6	7.85	13.7	17	2.76	.64	12.74		PC	6.
5	1,312,473	6.89			14.4	8.23							PC	6.
6	1,234,207	7.06			13.7	7.96							PC	7.
7	1,331,232	7.23			14.1	8.21				.86	11.92		PC	8
8	1,298,334	7.21											PC	8.
9														
10														
11	1,254,457	7.03	229	110	14.1	7.63	24.2	19	1.52	.17	11.82		PC	8.
12	1,326,907	7.20			13.5	7.51							PC	8.
13	1,273,156	7.02			13.5	7.70							PC	8.
14	1,305,838	7.20			14.9	7.69							PC	8.
15	1,257,985	7.24			14.5	7.68				.69	11.97		PC	9.
16														
17														
18	1-1													
19	1,273,233	7.20	230	90	14.7	7.68	32.5	24	<0.050	1.47	11.33		PC	10.
20	1,090,945	7.10			14.5	7.73						X	PC	9.
21	1,567,361	7.29			14.1	7.56							PC	6.
22	1,340,024	7.15			12.0	7.81				.27	13.59		PC	5.6
23														
24														
25	1,312,459	6.89	203	87	14.6	7.74	13.5	23	<0.050	.32	11.93	X	PC	7.5
26	1,450,867	7.17			12.2	7.52							PC	8.0
27	1,190,953	7.03			12.7	8.17							PC	8.5
28	1,186,596	6.89			12.5	7.64				.41	11.25		PC	7.8
29														
30														
31														
No.of Samp.	19		4	4			4	4						19
Tot of Samp.	19,587,255		773	356			83.9	83						151.6
Monthly Avg.	1,030,900		193.25	89			20.9	20.75						8.0
Daily Max.	1,567,361	7.23	230	110	14.9	8.23	32.5	24						10.5
Daily Min.	1,030,900	6.89	111	69	12.0	7.51	13.5	17						5.0
Max 7/ Avg.	1,541,497													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM.

MO 780-1306 (8-02)

Attachment 3 Page 31 of

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
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27									
28									
29									
30									
31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	Lab	573-204-8817	2-28-13
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Redman	Ops.	573-683-3325	2-28-13

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
MARCH . 2013	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F (C)	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	[illegible] °C
1	1,203,644	7.21			12.7	7.63				.23	10.49		PC	7.
2														
3														
4	1,178,108	7.13	102	59	13.2	7.63	13.1	37	<0.050	.41	12.53		PC	6.
5	1,236,411	6.97			13.5	7.71							PC	6.
6	1,163,624	7.38			14.2	7.61							PC	5.
7	1,081,016	7.04			12.7	7.85							PC	5.
8	1,155,782	6.89			13.1	7.70				.42	13.23		PC	6.
9														
10														
11	1,221,361	6.99	176	165	12.4	7.55	10.7	26	<0.050	.41	11.20		PC	9.
12	1,098,842	7.15			13.6	7.61							PC	10.
13	1,078,584	7.17			14.5	7.52							PC	9.
14	1,102,815	7.10			13.6	7.63							PC	10.
15	1,248,799	7.18			13.8	7.84				1.31	13.21	R	PC	10.
16														
17														
18	1877933	7.16	62.7	95	13.7	7.49	11.8	13	<0.050	1.05	11.84		PC	10.
19	1,253,376	7.27			14.6	7.69							PC	9.
20	1,085,702	7.23			14.6	7.68							C	9.
21	1,155,301	7.20			13.8	7.59							PC	9.9
22	1,141,986	7.21			14.0	7.86				.83	11.91	S	PC	10.
23														
24														
25	1,161,560	7.25	150	81	13.6	7.66	10	11	<0.050	1.13	12.37		PC	8.2
26	1,152,370	7.12			14.0	7.59							PC	9.1
27	1,119,323	7.21			13.2	7.95							PC	10.
28	1,293,598	7.10			14.5	7.72				1.27	12.23		PC	8.4
29	Holiday													
30														
31														
No.of Samp.	20		4	4			4	4						20
Tot of Samp.	24,090,145		490.7	400			45.6	87						172
Monthly Avg.	1,204,507		122.6	100			11.4	21.75						8.6
Daily Max.	1877933	7.38	176	165	14.6		13.1	33.1						10.4
Daily Min.	1,078,584	6.89	62.7	59	12.4		10	11						5.5
Max 7/ Avg.	1,329,481													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
April 2013	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ INF. ☐ OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F °C	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	TEMP °C
1	1,114,177	6.98	152	63	14.0	8.12	14.8	8	<0.050	.86	11.41		PC	9.
2	1,114,177	7.16			15.4	7.68							PC	11.
3	1,078,498	7.05			14.9	7.81							PC	10.
4	1,080,459	7.21			14.4	7.79							PC	10.
5	1,058,744	7.15			14.7	8.05				1.05	11.51		PC	16.
6														
7														
8	1,179,604	7.27	156	77	15.2	7.71	12.1	14	<0.050	.86	10.15		PC	16.
9	1,196,067	7.10			15.3	7.85							PC	16.
10	1,120,870	7.24			15.2	7.75							PC	18.
11	1,895,226	7.16			15.8	7.63						R	PC	17.
12	1,122,990	7.25			16.6	7.61							PC	17.
13														
14														
15	1,107,067	7.12	237	151	16.3	7.86	8.1	17	<0.050	.81	10.38		PC	18.
16	1,006,269	7.20			16.1	7.93							PC	21.
17	1,091,378	7.24			16.4	7.81							PC	21.
18	1,542,513	7.15			17.1	7.63						R	PC	21.
19	1,398,452	7.16			17.0	7.71							PC	18.
20										.51	10.10			
21														
22	1047288	7.27	133	81	16.6	7.79	20.3	24	6.51	.16	9.87		PC	18.
23	1,179,718	7.18			15.3	7.85						R	PC	19.
24	1,351,674	7.37			16.7	7.88						R	PC	12.
25	1,140,762	7.22			16.9	7.74						R	PC	17.
26	1,560,683	7.03			16.3	7.91				.66	10.41		PC	17.
27														
28														
29	1,318,122	7.04	127	50	17.1	7.95	16.7	18	13.9	.20	10.33		PC	16.
30	1,184,490	7.11			17.2	7.81							PC	16.
31														
No. of Smp.	22		5	5			5	5						22
Tot of Samp.	23,603,954		805	423			72	81						36
Monthly Avg.	1,072,907		161	84.4			14.4	16.2						16.
Daily Max.	1,895,226	7.37	237	151	16.9	8.12	20.3	18						21.
Daily Min.	1,003,776	6.98	127	50	14.0	7.61	8.1	8						9.
Max 7/ Avg.	1,441,811													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

MO 780-1306 (8-02)

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l.	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis Sout	Lab	573-204-8817	4-30-13
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Allen Rodgers	Oper	573 683-3325	4-30-13

MO-780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address:	Address Change for Owner: ☐ Billing ☐	Facility Address:

THIS REPORT COVERS THE PERIOD: Please place an "X" in the box beneath the appropriate quarter.

1st Quarter = January through March Due by April 28th,20____	2nd Quarter = April through June Due by July 28th,20____	3rd Quarter = July through September Due by October 28th,20____	4th Quarter = October through December Due by January 28th,20____
☐	☐	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:

				OUTFALL 001			
PARAMETER	UNITS	PERMITTED FINAL LIMITS			DATE 4-1-13 TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG				
Cyanide, Amenable to Chlorination	ug/L	*		*	<5	4-23-13	Grab	Lachat - CN2/Sm-4500CNG
Arsenic, TR	ug/L	*		*	0.452	4-18-13	Grab	EPA-200.7 Rev 4.4
Beryllium, TR	ug/L	*		*	<1	4-05-13	Grab	EPA-200.7 Rev 4.4
Cadmium, TR	ug/L	*		*	<3	4-18-13	Grab	Sm-3111 B99
Chromium (III), TR	ug/L	*		*	<5	4-18-13	Grab	Sm-3111 B3500-Cr B-01
Chromium (VI), TR	ug/L	*		*	<5	4-1-13	Grab	Sm-3500-Cr B-01
Iron, TR	ug/L	*		*	0.135	4-11-13	Grab	Sm-3111 B-99
Mercury, TR	ug/L	*		*	<0.2	4-10-13	Grab	Sm-3111 B99
Nickel, TR	ug/L	*		*	<0.015	4-18-13	Grab	Sm 3111 B99
Selenium, TR	ug/L	*		*	<2	4-18-13	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*		*	<5	4-18-13	Grab	Sm-3111 B99
Thallium, TR	ug/L	*		*	<2	4-18-13	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	4-30-13	573-683-3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	4-30-13	Same	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
MAY 2013	001	MO-0120081	AIR LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	SUSP. SOLIDS mg/L	TEMP °F (C)	PH UNITS	BOD mg/L	SUS. SOLIDS Mg/L	AMM	IN D.O.	EFF D.O.	RAIN	WEATHER	~~TIME~~ Tc OC
1	1,221,499	7.29			17.5	7.95				.58	10.13		PC	20.9
2	1,300,279	7.15			17.2	7.99							PC	20.8
3	1,770,137	7.20			16.7	8.12						X	PC	19.5
4														
5														
6	1,436,729	7.12	67.9	66	16.0	8.31	39.2	17	12.6	.46	9.85	X	PC	17.3
7	1,277,040	6.87			18.2	7.91							PC	18.4
8	1,362,987	6.60			18.7	7.78							PC	21.1
9	1,322,271	7.07			18.5	7.93							PC	21.1
10	1,283,249	7.29			18.6	7.84				.20	9.66		PC	21.8
11														
12														
13	1,162,549	6.75	178	69	19.7	7.94	24.9	26	5.87	.86	8.90		PC	21.0
14	1,166,308	7.08			19.7	8.02							PC	22.1
15	1,192,630	7.30			18.8	7.85							PC	23.3
16	936,103	7.02			19.2	7.74							PC	23.5
17	1,811,643	7.19			19.2	7.91				.56	8.35		PC	22.1
18														
19														
20	1,288,402	7.12	207	53	19.0	7.87	8.79	23	<0.050	.93	10.21	X	PC	22.5
21	1,700,136	7.33			19.1	7.89						X	PC	24.1
22	1,671,326	6.99			19.4	7.90							PC	24.3
23	1,185,155	7.10			24.5	7.86							PC	23.0
24	1,178,018	7.22			24.1	7.79				.54	8.76		PC	23.1
25														
26														
27	H													
28	1,186,366	6.55	118	57	21.1	8.24	6.76	25	<0.050	.13	8.61		PC	26.1
29	1,140,553	7.01			21.2	7.91							PC	25.3
30	1,227,235	7.06			21.3	8.10						X	PC	25.0
31	1,996,778	7.00			25.8	8.03				.51	8.19			25.0
No.of Samp.	22		4	4			4	4						22
Tot of Samp.	24,315		507.9	245			79.65	91						482.4
Monthly Avg.	1,105,202		142.4	61.25			19.9	22.75						22.1
Daily Max.	1,700,136		207	69	25.8	8.31	39.2	26						26.9
Daily Min.	936,103		6.79	53	16.0	7.74	6.76	1.7						17.3
Max 7/ Avg.	1,589,320													

NOTE: SEE INSTRUCTION ON REVERSE SIDE OF THIS FORM

MO 780-1306 (8-02)

Incinfosit A

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	SLUDGE DISP. (LBS. DRY WT.)	TEMP °F - °C	RAIN AND WEATHER
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
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20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

1. Fill out one copy of report each month and mail in monthly for each treatment facility.
2. Mail one copy of report to the appropriate **DNR regional office** as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp. and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids tests unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All tests must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY	TITLE	PHONE #	DATE
Environmental Analysis	Lab	573-204-8817	5-31-13
REPORT APPROVED BY	**TITLE**	**PHONE #**	**DATE**
Ollie Podraza	Oper.	573-683 3325	5-31-13

MO 780-1306 (8-02)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
June 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L
1														
2														
3	1,125	7.21	105	44	25.1	6.38	8.10	22	<0.050	<5	25.1	<.002	2.6	1.29
4	1,034	7.01			21.5		7.73				26.2			
5	1,117	7.28			20.1		8.04				25.4			
6	1,095	7.30			19.5		7.92				26.5			
7	1,125	7.26			19.3		8.06				26.4			
8														
9														
10	1,036	6.93	109	48	22.1	6.25	8.32	19	<0.050		26.0			
11	1,110	6.88			22.4		7.96				26.6			
12	1,001	6.97			22.4		8.00				28.1			
13	1,195	7.02			22.5		8.02				27.6			
14	1,117	7.05			26.8		8.01				28.4			
15														
16														
17	1,052	6.89	169	51	26.4	6.42	8.06	17	<0.050		28.6			
18	1,098	6.91			25.8		8.06				24.3			
19	1,107	7.05			23.2		8.00				27.8			
20	1,021	6.98			25.2		8.02				27.8			
21	1,055	7.13			24.2		8.08				28.5			
22														
23														
24	1,071	6.98	149	67	24.7	8.9	8.05	12	<0.050		28.9			
25	1,109	6.93			23.7		8.09				29.7			
26	1,036	6.91			23.5		8.05				28.8			
27	1021	6.98			24.5		8.07				28.9			
28	1,095	7.11			24.6		8.09				29.2			
29														
30														
31														
No.of Samp.	20	20	4	4	20	4		4	4		20			
Tot of Samp.	21,686	140.8	530	254	474	27.9		70	0.2		550			
Monthly Avg.	1,090		132.5	63.5	23.7	6.98		17.5	.05		27.5			
Daily Max.	1,195	7.30	169	67	25.8	8.9		22			29.7			
Daily Min.		6.88												
Weekly Avg.														
Percent Removal			95%	72%										

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2								
3			8.42					PC
4								PC
5								PC
6								PC
7			8.56					PC
8								
9								
10			8.54					PCR
11								PC
12								PC
13								PC
14			8.35					PC
15								
16								
17			8.31					PC
18								PC
19								PC
20								PC
21			8.36					PC
22								
23								
24			8.64					PC
25								PC
26								PC
27								PC
28			8.00					PC
29								
30								
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis	TITLE Lab	PHONE # 573-204-8817	DATE 7-12-13
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Cobbs	TITLE Oper.	PHONE # 573-683-3325	DATE 7-12-13
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
July 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L
1	1.569	6.91	145	63	24.3	8.91	8.12	12	<0.050	<5	25.4	<2	<2	0.2
2	1.552	7.02			23.1		8.18				24.5			
3	1.473	7.01			23.4		8.25				24.2			
4														
5	Holiday													
6	weekend													
7														
8	1.343	7.05	103	75	24.1	6.15	8.11	13	<0.050		24.8			
9	1.115	7.04			26.8		8.07				26.4			
10	1.125	7.13			26.1		8.25				29.2			
11	1.042	6.98			26.3		8.09				29.3			
12	1.075	7.05			28.6		8.27				28.6			
13														
14														
15	1.194	6.98	134	69	26.4	9.15	8.18	7.37	<0.050		28.7			
16	1.135	6.98			26.6		8.27				28.6			
17	1.093	6.71			25.5		8.28				29.0			
18	1.177	6.91			24.9		8.16				28.1			
19	1.060	6.97			24.5		8.25				29.1			
20														
21														
22	1.972	6.98	46.2	111	24.5	6	8.15	12	<0.050		29.1			
23	1.837	6.91			23.0		8.17				30.1			
24	1.218	7.05			23.2		8.19				29.0			
25	1.049	6.98			22.5		8.15				27.5			
26	.991	6.93			23.2		8.01				28.4			
27														
28														
29	.981	6.99	145	78	25.1	6.98	8.22	11	<0.050		26.7			
30	1.248	6.87			24.2		8.20				25.8			
31	1.072	6.88			23.5		8.10				25.9			
No.of Samp.	21	21	5	5	21	5		5	5		21			
Tot of Samp.	26.3	146.3	573	396	519.6	32.19		55.37	0.25		580			
Monthly Avg.	1.252		115	79.2	24.7	7.4		11.0	.05		27.6			
Daily Max.	1.972	7.05	145	111	28.6	9.15	8.28	13	<0.050		30.1			
Daily Min.		6.71					8.01							
Weekly Avg.														
Percent Removal			93%	86%										

Attachment 3 Page 41 of

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	Eff DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			8.06					PCR
2								PC
3								PC
4								
5								
6								
7								
8			7.81					PC
9								PC
10								PC
11			8.35					PC
12								PC
13								
14			8.31					
15								PC
16								PC
17								PC
18								PC
19			8.02					PC
20								
21								
22			7.40					PC
23								PCR
24								PC
25			8.31					PC
26								PC
27								
28								
29			8.57					PC
30								PC
31			8.30					PC

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis	TITLE LAb	PHONE # 573 204-8817	DATE 7-31-13
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Rader	TITLE Ofcl.	PHONE # 573 683 3325	DATE 7-31-13
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

Attachment 3 Page 43 of

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston 204 N. MAIN St Charleston MO	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall 204 N Main St Charleston MO 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20____	Due by July 28th,20____	Due by October 28th,20____	Due by January 28th,20____
☐	☐	☒	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	573-683-3325	Environmental Analysis South INC	573 204 8817

OUTFALL 001

PARAMETER	UNITS	PERMITTED FINAL LIMITS			DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG				
Cyanide, Amenable to Chlorination	ug/L	*		*	5	7-10-13	Grab	Lachat - QuikChem 10-204-00-1-X
Arsenic, TR	ug/L	*		*	5	7-09-13	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*		*	1	7-08-13	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*		*	<3	7-23-13	Grab	SM 3111 B-99
Chromium (III), TR	ug/L	*		*	<5	7-25-13	Grab	SM-3111 B/3500-Cr B-01
Chromium (VI), TR	ug/L	*		*	<5	7-01-13	Grab	SM-3500 Cr B-01
Iron, TR	ug/L	*		*	138	7-03-13	Grab	SM 3111 B-99
Mercury, TR	ug/L	*		*	<0.2	7-12-13	Grab	SM 3112 B-99
Nickel, TR	ug/L	*		*	<15	7-23-13	Grab	SM 3111 B-99
Selenium, TR	ug/L	*		*	5	7-09-13	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*		*	<2	7-08-13	Grab	SM 3111 B-99
Thallium, TR	ug/L	*		*	<5	7-08-13	Grab	EPA-200.7 Rev 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers Oper.	7-31-13	573 683 3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	**DATE**	**PHONE NUMBER**	**EMAIL ADDRESS:**
Allen Rodgers Oper.	7-31-13	573 683 3325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
AUGUST 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☒ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zin TR ug/l
1	.978	7.07			24.7		8.26				26.8				
2	1.116	7.03			24.5		8.10				26.9				
3															
4															
5	1.213	6.87	146	93	23.5	6.50	7.98	10	<0.050	<5	26.9	0.519	5	<2	<
6	1.419	6.96			24.7		8.24				26.0				
7	1.488	7.02			23.1		8.01				26.5				
8	1.412	6.87			23.4		8.10				27.1				
9	1.412	7.04			24.1		8.26				27.5				
10															
11															
12	1.320	6.96	208	120	24.5	6.51	8.05	8	<0.050		26.7				
13	1.066	6.86			24.6		8.12				26.9				
14	1.099	6.83			24.5		8.50				26.8				
15	1.057	7.15			23.5		8.38				26.1				
16	1.103	6.99			23.4		8.24				26.3				
17															
18															
19	1.172	7.16	163	106	26.3	12.5	8.33	12	<0.050		26.0				
20	1.099	6.98			21.6		8.12				26.3				
21	1.166	7.13			20.8		8.36				26.7				
22	1.164	7.05			21.3		8.27				28.4				
23	1.206	6.99			21.0		8.31				27.3				
24															
25															
26	1.182	7.03	175	120	24.6	13.6	8.29	7	<0.050		28.5				
27	1.160	6.99			25.5		8.21				25.1				
28	1.141	7.03			24.6		8.34				29.4				
29	1.259	7.05			25.7		8.16				28.4				
30	1.173	6.89			25.6		8.14				30.1				
31															
No.of Samp.	22	22	4	4	22	4		4	4		22				
Tot of Samp.	27.8	155	692	439	540	35.11		37	0.2		600.7				
Monthly Avg.	1.264	7.09	173	110	24.5	9.77		9.25	.05		27.3				
Daily Max.	1.488	7.16	208	120	25.7	13.6	8.50	12	<0.050		30.1				
Daily Min.		6.83					7.98								
Weekly Avg.															
Percent Removal			94%	92%											

Attachment 3 Page 44 of

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			8.64					PC
2								PC
3								
4								
5			8.21					PCR
6								PCR
7								PCR
8			8.55					PCR
9								PC
10								
11								
12			8.31					PC
13								PC
14								PC
15								PC
16			8.41					PC
17								
18								
19			8.61					PC
20								PC
21								PC
22								PC
23			8.51					PC
24								
25								
26			8.35					PC
27								PC
28								PC
29			8.21					PC
30								PC
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE Lab	PHONE # 573-204-8817	DATE 8-30-13
GNATURE OF OWNER OR DESIGNEE APPROVING REPORT Dean Podsun	TITLE Oper.	PHONE # 573 683 3325	DATE 8-30-13
IL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
AUGUST 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	.978	7.07			24.7		8.26				26.8				
2	1.116	7.03			24.5		8.10				26.9				
3															
4															
5	1.213	6.87			23.5		7.98				26.9				
6	1.419	6.96			24.7		8.24				26.0				
7	1.488	7.02			23.1		8.01				26.5				
8	1.412	6.87			23.4		8.10				22.1				
9	1.412	7.04			24.1		8.20				27.5				
10															
11															
12	1.320	6.96	208	120	24.5	6.51	8.05	8	0.050		26.7				
13	1.066	6.86			24.6		8.12				26.9				
14	1.099	6.83			24.5		8.50				26.8				
15	1.057	7.15			23.5		8.38				26.1				
16	1.103	6.99			23.4		8.24								
17															
18															
19	1.172	7.16	163	106	21.3	12.5	8.33	12	0.050		26.0				
20	1.099	6.98			21.6		8.12				26.3				
21	1.166	7.13			20.8		8.36				26.7				
22	1.164	7.05			21.3		8.27				28.4				
23	1.206	6.99			21.0		8.31				27.3				
24															
25															
26	1.182	7.03	175	120	24.6	13.6	8.29	7	0.050		28.5				
27	1.160	6.99			25.5		8.21				29.1				
28	1.141	7.03			24.6		8.34				29.4				
29	1.259	7.05			25.7		8.10				28.4				
30	1.173	6.98			25.6		8.14				30.1				
31															
No.of Samp.	22	22	4	4	22	4		4	4		22				
Tot of Samp.	27.8	155			540						523				
Monthly AVE.	1.264				24.5						26.0				
Daily Max.	1.488	7.16			25.7		8.50				30.1				
Daily Min.		6.83					7.98								
Weekly Avg.															
Percent Removal															

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l (Eff)	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			8.64					PC
2			8.26					PC
3								
4								
5			8.21					PCR
6			8.56					PCR
7			8.31					PCR
8			8.55					PCR
9			8.41					PC
10								
11								
12								PC
13			8.31					PC
14			8.21					PC
15			8.38					PC
16			8.41					PC
17			8.21					
18								
19			8.61					PC
20			8.53					PC
21			8.50					PC
22			8.20					PC
23			8.51					PC
24								
25								
26			8.35					PC
27			8.37					PC
28			8.18					PC
29			8.21					PC
30			8.03					PC
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
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8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE LAb	PHONE # 573-204-8817	DATE 8-30-13
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Rodeer	TITLE Oper.	PHONE # 573 683-3325	DATE 8-30-13
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
SEPTEMBER 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT								
DAY	FLOW: MGD GPD ☒ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L
1														
2														
3	1,117	6.89	129	102	25.4	6.98	8.05	11	<0.050	<5	29.5	<0.0040	2	<0.020
4	1,116	6.88			25.4		8.40				28.4			
5	1,106	7.02			25.2		8.09				28.5			
6	1,120	6.89			25.5		8.13				28.1			
7														
8														
9	1,234	6.86	191	172	23.4	9.15	8.21	24	<0.050		29.0			
10	1,101	7.16			21.7		8.21				28.5			
11	1,204	6.94			21.9		8.05				28.5			
12	1,098	7.02			20.9		8.10				28.2			
13	1,008	6.98			22.4		8.00				28.5			
14														
15														
16	1,109	7.05	121	86	23.6	6.84	8.16	15	<0.050		25.0			
17	1,108	6.98			21.4		8.05				25.5			
18	1,171	6.76			24.5		8.16				25.3			
19	1,087	6.98			24.2		8.04				25.1			
20	1,118	6.98			23.6		8.10				25.1			
21														
22														
23	1,160	6.91	145	101	23.7	8.48	8.23	16	<0.050		23.7			
24	1,037	6.98			24.7		8.19				23.6			
25	1,567	6.92			24.5		8.35				23.0			
26	1,415	7.08			23.3		8.10				23.0			
27	1,311	7.18			23.1		8.14				23.1			
28														
29														
30	1,331	7.10	129	76	23.0	6.02	8.25	11	<0.050		23.1			
31														
No.of Samp.	20	20	5	5	20	5	20	5	5		20			
Tot of Samp.	23.6	140	715	537	471	37.5	163	77	2.5		523			
Monthly Avg	1,176		143	172	24	7.5		15.4	.05		26.1			
Daily Max.	1,565	7.16	191	76	25.5	9.15	8.40	24	<0.050		29.5			
Daily Min.		6.76					8.00							
Weekly Avg.														
Percent Removal			95%	86%										

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	Eff DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2								
3			8.11				29.9	PC
4								PC
5								PC
6			8.04				28.1	PC
7								
8								
9			8.35				29.0	PC
10								PC
11								PC
12								PC
13			8.31				28.5	PC
14								
15								
16			8.71				25.0	PC
17								PC
18								PC
19			8.61				25.1	PC
20								PCR
21								
22								
23			8.95				23.7	PC
24								PCR
25								PCR
26								PC
27			8.61				23.1	PC
28								
29								
30			9.05				23.1	PC
31								

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY: PLEASE PRINT: Environmental Analysis South | TITLE: LAb | PHONE #: 573-204-8817 | DATE: 9-30-13

SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT: Allen Rodgers | TITLE: Ofcr. | PHONE #: 573-683-3325 | DATE: 9-30-13

EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
OCTOBER 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	1,196	7.25			23.5		8.30				23.1				
2	1,498	7.07			23.5		8.13				23.0				
3	1,315	6.98			23.9		8.21				23.1				
4	1,653	6.85			22.0		8.14				23.0				
5															
6															
7	2,047	6.95	316	28	21.0	7.53	8.01	12	<0.050	<5	22.5	<2	3	<2	3
8	1,960	7.20			19.9		8.22				21.5				
9	1,608	7.11			19.8		8.15				21.0				
10	1,201	7.05			19.2		8.10				21.0				
11	1,204	7.23			19.5		8.41				21.3				
12															
13															
14	—														
15	1,253	6.89	112	77	20.9	3.13	8.97	7	<0.050		19.7				
16	1,236	7.20			21.2		8.31				19.4				
17	1,211	7.13			21.5		8.26				19.8				
18	1,157	7.23			20.0		9.01				19.6				
19															
20															
21	1,219	7.05			19.7		8.71				19.7				
22	1,170	7.19			19.2		9.97				18.8				
23	1,146	7.22	179	79	19.8	2.28	9.05	9	<0.050		17.3				
24	1,115	6.99			19.2		8.74				16.9				
25	1,127	7.20			18.7		8.26				15.2				
26															
27															
28	1,241	7.07	202	114	18.8	9.00	8.21	9	<0.050		16.5				
29	1,280	7.26			17.8		8.47				16.5				
30	1,266	7.28			17.9		8.24				17.0				
31	1,456	6.99			18.8		8.23				17.0				
No.of Samp.	22	22	4	4	22	4	22	4	4		22				
Tot of Samp.	28,009	156.47	529.6	298	445.8	21.9	185.8	37	0.2		433				
Monthly Avg.	1,273		131.5	74.5	20.2	5.4		9.25	.05		19.7				
Daily Max.	2,047	7.28	202	114	23.9	9.00	9.97	9	<0.050						
Daily Min.		6.85					8.01								
Weekly Avg.															
Percent Removal			96.8	96%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			8.71					PC
2								PCR
3								PC
4			8.01					PC
5								
6								
7			9.23					PCR
8								PC
9								PC
10								PC
11			9.24					PC
12								
13								
14	—							
15			8.21					PCR
16								PCR
17								PC
18			9.18					PC
19								
20								
21			10.31					PC
22								PC
23								PC
24			10.62					PC
25								PC
26								
27								
28			10.35					PC
29								PCR
30			11.09					PC
31								PCR

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2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

TESTS PERFORMED BY PLEASE PRINT: Environmental Analysis South | TITLE: LAB | PHONE #: 573 204-8817 | DATE: 11-18-31

SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT: Allen Fuller | TITLE: Oper. | PHONE #: 573 683 3325 | DATE: 11-18-31

EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall 204 N Main St Charleston MO. 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20____	Due by July 28th,20____	Due by October 28th,20____	Due by January 28th,20 13
☐	☐	☐	☒
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	573-683-3325	Environmental Analysis South	573-204-8817

OUTFALL 001

PARAMETER	UNITS	PERMITTED FINAL LIMITS DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
Cyanide, Amenable to Chlorination	ug/L	*		*	5	11-01-13	Grab	LAChat-QW2/5m 4.500CNG
Arsenic, TR	ug/L	*		*	5	10-15-13	Grab	EPA 200.7 Rev. 4.4
Beryllium, TR	ug/L	*		*	1	10-15-13	Grab	EPA 200.7 Rev. 4.4
Cadmium, TR	ug/L	*		*	<3	10-17-13	Grab	Sm-3111 B99
Chromium (III), TR	ug/L	*		*	<5	10-18-13	Grab	Sm-3111 B/3500-Cr B01
Chromium (VI), TR	ug/L	*		*	<5	10-07-13	Grab	Sm 3500 Cr B-01
Iron, TR	ug/L	*		*	185	10-24-13	Grab	Sm-3111-B99
Mercury, TR	ug/L	*		*	<0.2	10-30-13	Grab	Sm-3112 B-99
Nickel, TR	ug/L	*		*	<15	10-17-13	Grab	Sm.3111 B-99
Selenium, TR	ug/L	*		*	<5	10-15-13	Grab	EPA-200.7 Rev.4.4
Silver, TR	ug/L	*		*	<5	10-15-13	Grab	Sm-3111 B-99
Thallium, TR	ug/L	*		*	<5	10-15-13	Grab	EPA 200.7 Rev 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	11-18-13	573-683-3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	11-18-13	573-683-3325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
NOVEMBER 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	1.275	7.03			17.9		8.11				17.3				
2															
3															
4	1.093	6.91	161	84	19.0	9	8.34	11.4	<0.050	<5	15.0	<0.002000	3	<0.00200	<3
5	1.093	7.05			19.5		8.21				15.3				
6	1.353	6.98			18.4		8.51				13.2				
7	1.190	7.12			18.8		8.31				13.0				
8	1.113	7.03			19.1		8.25				13.4				
9															
10															
11	H														
12	1.087	7.34	241	203	18.1	10	8.30	6.15	<0.050		13.9				
13	1.118	7.09			18.3		8.30				13.9				
14	1.219	7.21			18.6		8.09				10.2				
15	1.186	7.24			17.0		8.26				10.0				
16															
17															
18	1.213	7.29	136	70	17.4	16	8.10	7.82	<0.050		11.2				
19	1.158	7.24			17.8		8.39				11.5				
20	1.250	7.41			17.3		8.22				11.5				
21	1.131	7.25			17.1		8.06				12.3				
22	1.234	7.31			17.5		8.22				13.4				
23															
24															
25	1.202	7.04	139	82	15.4	16	8.26	9.06	<0.050		9.7				
26	1.200	7.30			15.5		8.11				10.5				
27	1.199	6.95			16.4		7.97				6.1				
28															
29															
30															
31															
No.of Samp.	18	18	4	4	18	4	18	4	4		18				
Tot of Samp.	20.0	129	677	439	332	51	148	34.4	0.2		223				
Monthly Avg.	1.167		169	110	18.7	12.75		8.60	.05		11.8				
Daily Max.	1.353	7.41	241	203	19.5	16	8.51	11.4	<0.050		17.3				
Daily Min.		6.91					7.91								
Weekly Avg.															
Percent Removal			92%	92%											

Attachment 3 Page 53 of ____

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	Eff DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								PC
2								
3								
4			11.22					PC
5								PC
6								PC
7								PCR
8			11.31					PCR
9								
10								
11								
12			11.39					PC
13								PC
14								PC
15			11.98					C
16								
17								
18			10.40					PC
19								PC
20								PC
21								PC
22			8.41					PCR
23								
24								
25			11.69					PC
26								PC
27			13.19					PC
28								
29								
30								
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT	TITLE	PHONE #	DATE
Environmental Analysis South	LAb	573-204-8817	12-16-13
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	TITLE	PHONE #	DATE
Allen Fodder	Oper.	573-683-3325	12-16-13
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM

MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

COPY

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
DECEMBER 2013	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT						EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	
1															
2	1,228	6.77	249	98	15.1	9.9	8.27	21	<0.050	<5	6.9	<0.00200	2	<2	<
3	1,216	6.87			15.2		8.03				6.9				
4	1,151	6.68			16.3		8.19				8.7				
5	1,250	6.68			16.4		8.36				10.0				
6	1,250	6.93			16.0		8.31				8.7				
7															
8															
9	1,283	7.01	143	107	14.4	22.5	8.39	20	<0.050		5.4				
10	1,025	7.24			14.5		8.02				2.8				
11	1,036	6.98			14.5		8.21				3.5				
12	1,000	7.07			14.6		8.13				3.1				
13	1,265	7.11			13.9		8.30				3.5				
14															
15															
16	1,294	7.04	119	76	13.7	23.2	8.41	22	<0.050		5.9				
17	1,075	6.98			13.8		8.56				7.0				
18	1,051	7.21			14.0		8.30				9.3				
19	1,163	7.31			14.1		8.26				11.5				
20	1,961	7.01			14.0		8.20				10.8				
21															
22															
23	2,061	7.16	145	134	13.9	18.7	8.16		<0.057		7.0				
24	1,985	7.10			13.7		8.25	20			10.3				
25															
26	2,074	7.10			13.7		8.25				10.5				
27	2,078	7.19			13.4		8.37				9.1				
28															
29															
30	2,268	7.26	54.5	57	14.5	28.8	8.06	25	2.17		5.2				
31	2,141	7.18			14.2		8.14				4.1				
No.of Samp.	21	21	5	5	21	5	21	5	5		21				
Tot of Samp.	30,854	141	711	472	304	103.1	173.1	108	2.295		150.4				
Monthly Avg.	1,469		142.1	94.2	14.5	20.62		21.6	0.459		7.16				
Daily Max.	2,268	7.21	249	134	16.3	28.8	8.56	25	2.17		11.5				
Daily Min.		6.68					8.03								
Weekly Avg.															
Percent Removal			85%	77%											

Attachment 3 Page 55 of

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2			12.63					PC
3								PC
4								PC
5								PC
6			11.91					PCS
7								
8								
9			12.13					PC
10								PCS
11								PC
12								PC
13			14.69					PC
14								
15								
16			14.21					PC
17								PC
18								PC
19								PC
20			10.15					PC
21								
22								
23			13.34					PC
24								RAIN
25								RAIN
26								PC
27			13.41					PC
28								
29								
30			13.85					PC
31								PC

COMMENTS RAIN Dec 24-25
5-7 inch

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT	TITLE	PHONE #	DATE
Environmental Analysis South	Lab	573 204 8817	1-16-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	TITLE	PHONE #	DATE
Allen Fodrea	Oper.	573-683-3325	1-16-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
JANUARY 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1															
2	1.781	7.43			7.8		7.90				4.4				
3	1.880	7.30			7.9		8.10				4.2				
4															
5															
6	1.915	7.12	27.6	32	12.5	21.5	8.21	26	3.73	<5	1.5	<.002	7	.230	79
7	1.923	7.26			12.1		8.05				0.2				
8	1.863	7.25			12.5		8.19				0.2				
9	1.869	7.10			12.7		8.34				0.5				
10	1.738	7.20			11.8		8.44				1.2				
11															
12															
13	1.888	7.30	30.3	36	10.2	16.0	8.20	24	5.21		3.4				
14	1.893	7.24			10.3		8.25				3.5				
15	1.574	7.28			7.2		8.09				4.0				
16	1.641	7.20			9.5		8.13				3.8				
17	1.651	7.19			12.9		8.03								
18															
19															
20															
21	1.434	7.33	55.1	53	10.2	12.7	8.31	23	6.63		3.8				
22	1.429	7.21			9.6		8.20				4.0				
23	1.348	7.18			9.5		8.41				3.5				
24	1.396	7.25			6.9		8.12				1.5				
25															
26															
27	1.115	7.03	48.3	48	8.4	28.9	8.06	16	7.64		1.2				
28	1.258	7.26			7.3		8.22				1.2				
29	1.601	7.14			8.5		8.23				1.2				
30	1.384	7.15			11.6		8.69				1.5				
31	1.467	7.12			12.4		8.41				2.4				
No.of Samp.	21	21	4	4	21	4	21	4	4		21				
Tot of Samp.	32.2	151.5	161	169	211.8	79.1	172.6	89	23.21		52.6				
Monthly Avg.	1.533	7.21	40.35	42.25	10.8	19.7		22.25	5.80		2.4				
Daily Max.	1.932	7.43	55.1	53	12.9	28.9	8.69	26	7.64		4.4				
Daily Min.		7.03					7.90								
Weekly Avg.															
Percent Removal			51%	47%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2			12.13					PC
3								PC
4								
5								
6			13.10					PCR
7								PC
8								PC
9			14.21					PC
10								PC
11								
12								
13			14.34					C
14								PCR
15								PC
16			14.31					PC
17								PC
18								
19								
20								
21			13.05					PC
22								PC
23								PC
24			15.32					PC
25								
26								
27			13.34					PC
28								PC
29								PC
30								PCR
31			13.05					PC

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE LAB	PHONE # 573-204-8817	DATE 2-18-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Hacks	TITLE Oper.	PHONE # 573-683-3325	DATE 2-18-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston P.O. Box 216 Charleston MO	Address Change for Owner: ☐ Billing ☐	Facility Address: Charleston MO 204 N. Main St. 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20 14	Due by July 28th,20____	Due by October 28th,20____	Due by January 28th,20____
☒	☐	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:

OUTFALL 001

PARAMETER	UNITS	PERMITTED FINAL LIMITS			DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG				
Cyanide, Amenable to Chlorination	ug/L	*	<5	*		1-28-14	Grab	Lachat-CN2/Sm-4500 CN G
Arsenic, TR	ug/L	*	<6	*		1-13-14	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*	<10	*		1-13-14	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*	<3	*		1-16-14	Grab	SM-3111 B99
Chromium (III), TR	ug/L	*	<5	*		1-17-14	Grab	SM-3111 B-99
Chromium (VI), TR	ug/L	*	<5	*		1-17-14	Grab	SM-3111B/3500 Cr B-01
Iron, TR	ug/L	*	384	*		1-16-14	Grab	SM3111 B-99
Mercury, TR	ug/L	*	<1.2	*		1-24-14	Grab	SM-3112-B99
Nickel, TR	ug/L	*	<15	*		1-16-14	Grab	SM3111 B99
Selenium, TR	ug/L	*	<5	*		1-13-14	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*	<5	*		1-16-14	Grab	SM3111 B-99
Thallium, TR	ug/L	*	<0.50	*		1-13-14	Grab	EPA-200.7 Rev 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	2-10-14	5736833325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	2-10-14	573-6833325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES COPY

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
FEBRUARY 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☑ GPD ☐ INF. OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1															
2															
3	1.518	7.17	55.5	63	11.4	9.94	8.41	17	8.84	<5	1.0	<.002	<2	<200	<3
4	1.672	7.09			12.3		8.21				2.0				
5	1.599	7.21			12.0		8.35				3.5				
6	1.653	7.28			11.9		8.51				2.3				
7	1.475	7.32			11.4		8.17				1.3				
8															
9															
10	1.320	7.24	69.0	47	11.2	14.4	8.30	23	9.59		2.1				
11	1.037	7.19			12.3		8.49				1.7				
12	1.567	7.23			12.3		8.31				2.5				
13	1.408	7.21			12.2		8.35				1.5				
14	1.535	7.37			12.0		8.20				3.9				
15															
16															
17															
18	1.279	7.21	57.7	44	13.3	20.5	8.68	23	9.95		3.4				
19	1.453	7.16			13.5		8.51				3.9				
20	1.484	7.17			13.3		8.14				5.1				
21	1.360	7.21			12.0		8.36				6.8				
22															
23															
24	1.377	7.14	147	46	12.6	32.2	8.21	30	8.72		5.5				
25	1.332	7.05			11.9		8.35		8.17		5.8				
26	1.427	7.14			11.5		8.08		7.90		4.8				
27	1.267	7.09			8.8		8.19				5.1				
28	1.567	7.05			10.9		8.31		7.78		5.3				
29															
30															
31															
No. of Samp.	19	19	4	4	19	4	19	4	7		19				
Tot of Samp.	27.3	129.17	329	200	226.8	77.04	158.13	93	60.95		67.5				
Monthly Average	1.438		82.3	50	11.9	19.26		23.25	8.70		3.5				
Daily Max.	1.672	7.37	147	63	13.5	32.2	8.68	30	9.95		6.8				
Daily Min.		7.05					8.08								
Weekly Avg.															
Percent Removal			77%	96%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2								
3			14.96					PCS
4								PCS
5								PC
6								PC
7								PC
8								
9								
10			14.76					PC
11								PC
12								PC
13								PC
14								PCR
15								
16								
17								
18			14.37					PC
19								PC
20								PC
21								PC
22								
23								
24			11.41					PC
25								PC
26								PC
27								PC
28								PC
29								
30								
31								

COMMENTS As of FEBRUARY ARE NH3 Average was 8.70 we are reseed the Nitrifying bacteria ~~to~~ to bring Down the NH3. temperature of the water is 3.5° Averge of the month. ~~to~~

Allen Roden

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE Lab.	PHONE # 573.204.8817	DATE 3-21-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Roden	TITLE Oper.	PHONE # 573 683 3325	DATE 3-21-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

COBA

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
MARCH 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1															
2															
3	1.567	7.19	110	49	11.9	29.4	8.31	32	7.85	<5	2.1	0.00200	<3	0.00200	<2
4	1.672	7.29			11.6		8.27				1.7				
5	1.403	7.36			11.5		8.41				2.8				
6	1.398	7.01			12.1		8.06				3.0				
7	1.401	7.09			11.9		8.32				4.4				
8															
9															
10	1.468	7.28	63.2	26	13.3	36.1	8.22	26	6.43		6.9				
11	1.663	7.10			13.0		8.19		6.06		7.1				
12	1.776	7.21			12.4		8.00		5.32		9.6				
13	1.639	7.03			13.0		7.89		4.96		9.5				
14	1.686	6.98			13.1		8.21		4.12		10.4				
15															
16															
17	1.998	7.22	62.0	39	12.8	24.4	8.15	24	2.07		9.1				
18	1.713	6.94			13.2		7.97		1.76		9.8				
19	1.734	6.98			13.0		7.81				10.3				
20	1.603	6.99			12.6		7.51				10.7				
21	1.713	7.08			13.1		7.81		0.025		10.9				
22															
23															
24	1.485	7.05	40.5	27	12.4	19.4	7.85	24	0.025		9.0				
25	1.614	7.22			14.6		7.81		0.025		10.4				
26	1.485	7.11			13.7		7.67				9.4				
27	1.442	7.34			12.8		7.54				10.0				
28	1.669	7.07			12.8		7.79		0.025		11.0				
29															
30															
31	1.686	6.91	28.8	32	13.4	20.3	7.85	30	0.025		11.6				
No.of Samp.	21		5	5	21	5		5	13		21				
Tot of Samp.	34.2		304.5	173	225.1	127.5		136	38.72		169.7				
Monthly Avg.	1.62		60.9	34.6	12.1	36.1		27.2	2.97		8.0				
Daily Max.	1.998	7.36	63.2	49	14.6	19.4	8.32	32	7.85		11.0				
Daily Min.		6.94					7.51								
Weekly Avg.															
Percent Removal			41%	21%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	Eff DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2								
3			15.30					PCS
4								PC
5								PCS
6								PC
7			13.29					PC
8								
9								
10								PC
11			12.21					PC
12								PC
13								PC
14			11.36					PC
15								
16								
17			10.13					PC
18								PC
19								PC
20								PC
21			10.83					PC
22								
23								
24			11.13					PC
25								PC
26								PC
27								PC
28			11.52					PC
29								
30								
31			9.23					PC

COMMENTS

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3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
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8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE Lab	PHONE # 573 204-8817	DATE 4-16-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Fodge	TITLE Oper.	PHONE # 573 683 3325	DATE 4-16-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
April 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	1.420	7.29			15.4		7.75			<5	13.9	<.002	5	<.200	<3
2	1.473	7.05			15.5		7.68				16.3				
3	1.680	7.13			16.9		7.78				17.1				
4	1.660	7.06			15.7		7.67				16.8				
5															
6															
7	1.891	7.21	41.8	23	15.4	13.7	7.67	20	<0.050		15.3				
8	1.762	7.04			15.0		7.63				15.7				
9	1.616	7.11			15.3		7.70				15.8				
10	1.693	7.05			15.5		7.65				15.7				
11	1.591	7.20			16.0		7.81				16.7				
12															
13															
14	1.716	6.98	30.7	42	16.1	9.1	7.73	16	<0.050		16.1				
15	1.837	7.21			15.4		7.85				17.0				
16	1.938	7.10			17.0		7.69				18.4				
17	1.868	7.05			17.3		7.81				18.6				
18	H														
19															
20															
21	1.836	7.05	100	31	17.3	10.2	7.67	30	<0.050		18.8				
22	1.938	6.98			17.5		7.87				19.0				
23	1.703	7.20			17.6		7.84				18.3				
24	1.714	7.24			17.0		7.81				19.1				
25	1.613	7.05			17.3		7.83				18.5				
26															
27															
28	1.947	7.24	309	63	17.0	8.90	7.83	25	<0.050		19.6				
29	1.844	7.09			18.6		7.61				20.2				
30	1.755	7.05			20.1		7.63				20.1				
31															
No.of Samp.	21	21	4	4	21	4	21	4	4		21				
Tot of Samp.	36.0	150.26	203.4	159	348.9	41.9	162.18	91	0.2		366.5				
Monthly Avg.	1.737		50.85	39.75	16.6	10.4		22.75	.05		17.4				
Daily Max.	1.947	7.29	100	63	20.1	13.7	7.87	30	<0.050		20.2				
Daily Min.		6.98					7.61								
Weekly Avg.															
Percent Removal			79%	74%											

Attachment 3 Page 64 of 87

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			10.83					PC
2								PC
3								PCR
4			9.96					PC
5								
6								
7			10.30					PCR
8								PC
9								PC
10								PC
11			10.41					PC
12								
13								
14			10.21					PCR
15								PCR
16								PC
17			10.63					PC
18								
19								
20								
21			11.20					PC
22								PC
23								PC
24			9.75					PCR
25								PC
26								
27								
28			10.13					PCR
29								PC
30			9.21					PCR
31								

COMMENTS

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3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis	TITLE Lab.	PHONE # 573-204-8817	DATE 5-19-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Glen Rodgers	TITLE Opr.	PHONE # 573-683-3325	DATE 5-19-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston 204 N Main St	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall 204 N. Main St

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20___	Due by July 28th,20 14	Due by October 28th,20___	Due by January 28th,20___
☐	☒	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:

					OUTFALL 001			
PARAMETER	UNITS	PERMITTED FINAL LIMITS			DATE 4-7-14	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG	TIME 8:00 Am			
Cyanide, Amenable to Chlorination	ug/L	*		*	5	4/10/14	Grab	Lachat CN2/Sm-4500 CN G
Arsenic, TR	ug/L	*		*	<5	4/17/14	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*		*	<1	4/14/14	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*		*	<3	4/16/14	Grab	Sm-3111 B-99
Chromium (III), TR	ug/L	*		*	<5	4/17/14	Grab	Sm-3111B/3500-Cr B-01
Chromium (VI), TR	ug/L	*		*	<5	4/7/14	Grab	Sm-3500-Cr B-01
Iron, TR	ug/L	*		*	296	4/23/14	Grab	Sm 3111 B-99
Mercury, TR	ug/L	*		*	<0.2	4/10/14	Grab	Sm-3112 B99
Nickel, TR	ug/L	*		*	<15	4/17/14	Grab	Sm-3111B-99
Selenium, TR	ug/L	*		*	8	4/17/14	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*		*	<5	4/16/14	Grab	Sm-3111 B-99
Thallium, TR	ug/L	*		*	<5	4/17/14	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	5-19-14	5736833325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers	5-19-14	573683-3325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
MAY 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	1.838	7.13			17.6		7.77				18.8				
2	1.948	6.95			17.5		8.01				17.9				
3															
4															
5	1.982	7.03	64.0	70	18.0	24.8	7.81	16	<0.050	<5	19.7	<.002	<2	<.200	<3
6	1.895	6.98			19.9		7.70				21.3				
7	1.870	7.12			18.5		7.89				20.6				
8	1.775	7.32			17.9		8.22				23.0				
9	1.877	7.21			17.8		8.03				22.9				
10															
11															
12	1.988	7.04	47.1	38	18.5	9.32	8.22	10	<0.050		23.0				
13	1.917	6.95			19.2		7.99				24.2				
14	2.061	7.07			17.8		8.22				20.6				
15	2.000	7.10			18.1		8.15				18.8				
16	1.809	7.18			17.8		8.05				18.5				
17															
18															
19	1.840	7.13	116	20	17.6	8.11	8.10	12	<0.050		20.7				
20	1.719	7.21			18.0		8.26				20.5				
21	1.922	7.00			17.8		8.05				20.9				
22	1.760	7.11			18.0		8.24				21.9				
23	1.837	6.99			19.4		8.08				24.2				
24															
25															
26	NA														
27	1.890	7.05	51.5	42	19.7	9.01	8.12	14	<0.050		25.0				
28	1.821	7.05			20.2		8.31				25.7				
29	1.821	7.03			20.0		8.27				25.0				
30	1.841	7.15			19.8		8.35				24.8				
31															
No.of Samp.	21	21	4	4	21	4	21	4	4		21				
Tot of Samp.	39.4	150	278.6	170	389	51.24	170	52	0.2		458				
Monthly Avg.	1.876	7.14	69.65	42.5	18.5	12.81	8.13	13	.05		21.8				
Daily Max.	2.061	7.32	116	70	20.2	24.8	8.26	16	<0.050		25.7				
Daily Min.		6.95					7.70								
Weekly Avg.															
Percent Removal			81%	69%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			10.04					PC
2								PC
3								
4								
5			9.91					PC
6								PC
7								PC
8			8.15					PC
9								PC
10								
11								
12			9.31					PCR
13								PCR
14								PCR
15								PC
16			10.09					PC
17								
18								
19			9.50					PC
20								PC
21								PC
22								PC
23			8.86					PC
24								
25								
26								
27			8.41					PCR
28								PC
29								PCR
30			8.64					PC
31								

COMMENTS

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TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis	TITLE Lab	PHONE # 573 204 8817	DATE 5-30-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Korfen	TITLE Oper.	PHONE # 5736833325	DATE 5-30-14
MAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
June 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1															
2	1,880	6.97	149	56	18.4	12.7	8.07	20	<0.050	<5	24.8	<0.0028	3	<0.0026	1.3
3	1,726	7.23			20.1		8.02				26.3				
4	1,560	7.10			19.6		8.10				25.9				
5	1,423	6.98			18.7		8.13				25.4				
6	1,800	7.10			19.3		7.98				26.6				
7															
8															
9	1,900	7.05	204	95	20.2	15.1	8.08	19	<0.050		26.3				
10	1,914	6.90			21.0		8.10				25.0				
11	1,826	7.04			21.4		8.14				24.6				
12	1,820	6.99			20.4		8.24				25.1				
13	2,114	7.13			21.2		8.21				25.8				
14															
15															
16	1,816	7.07	64.6	50	20.1	7.17	8.03	12	<0.050		26.2				
17	1,818	7.01			21.5		8.26				26.3				
18	1,921	6.81			21.4		8.10				27.9				
19	1,689	7.03			21.4		8.06				28.2				
20	1,820	6.98			21.5		8.15				27.4				
21															
22															
23	1,895	7.00	123	68	20.7	7.66	8.03	15	<0.050		28.1				
24	1,835	7.05			24.1		8.21				26.4				
25	1,808	6.99			23.5		8.34				28.2				
26	1,773	7.03			24.0		8.29				28.0				
27	1,714	6.85			23.2		8.04				28.5				
28															
29															
30	1,841	6.96			23.0		8.01				29.3				
31															
No.of Samp.	21	21	4	4	21	4	21	4	4		21				
Tot of Samp.	38	147.2	540.6	269	445	42.6	171	66	.02		530.7				
Monthly Avg.	1,804		135.1	67.25	21.1	10.6		16.5	0.05		25.27				
Daily Max.	2,114	7.23	204	95	24.0	15.1	8.34	20	<0.050		28.5				
Daily Min.		6.81					8.01								
Weekly Avg.															
Percent Removal			92%	75%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2			9.49					PC
3								PC
4								PCR
5								PCR
6			8.29					PC
7								
8								
9								PCR
10			8.58					PCR
11								PCR
12								PC
13			8.35					PC
14								
15								
16			8.35					PC
17								PC
18								PC
19								PC
20			8.32					PC
21								
22								
23			8.31					PC
24								PC
25								PC
26			8.91					PC
27								PC
28								
29			8.45					
30								PC
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT	TITLE	PHONE #	DATE
Environmental Analysis South	LAb	573-204-8817	6-30-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	TITLE	PHONE #	DATE
Allen Eddy	Oper.	573683 3325	6-30-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
July 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☐ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	1,233	7.14			22.6		8.43				26.8				
2	1,275	7.08			23.5		8.30				27.7				
3	1,094	7.09			23.0		8.37				27.6				
4	H														
5															
6															
7	1,046	7.03	43.0	49	23.2	2.45	8.22	11	<0.050	<5	28.4	<0.00200	5.4	0.00287	8
8	1,076	7.10			22.3		8.35				28.6				
9	1,095	6.99			23.0		8.20				28.1				
10	1,043	7.17			23.6		8.57				28.9				
11	1,037	7.15			23.3		8.49				28.5				
12															
13															
14	1,057	7.03	181	210	22.5	6.85	8.61	9	<0.050		28.1				
15	1,168	7.12			21.7		8.53				28.3				
16	962	7.19			22.8		8.10				28.1				
17	965	7.06			23.3		8.59				27.4				
18	1,060	7.13			23.1		8.61				27.5				
19															
20															
21	1,311	7.05	45.1	97	24.1	7.46	8.10	8	<0.050		28.1				
22	1,025	7.13			23.4		8.18				28.5				
23	1,374	7.03			24.4		8.00				28.5				
24	1,084	7.09			24.0		8.22				28.9				
25	1,031	7.08			23.2		8.20				27.6				
26															
27															
28	1039	7.10	119	99	23.0	7.23	8.03	7	<0.050		28.5				
29	933	7.05			24.1		8.21				27.2				
30	933	7.01			24.1		8.49				27.4				
31	1,030	7.11			23.2		8.35				27.7				
No.of Samp.	22	22	4	4	22	4	4	4	4		22				
Tot of Samp.	23800	155.9	388	455	512.4	23.99	183.19	35	.02		616.4				
Monthly Avg.	1,082		97.0	113.7	23.3	5.9		8.75	0.05		28.0				
Daily Max.	1,374	7.19	181	210	24.4	7.46	8.61	11	<0.050		28.9				
Daily Min.		6.99					8.00								
Weekly Avg.															
Percent Removal			94%	92%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	EFF ALK. ml/l	DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1		8.61						PC
2								PC
3		8.35						PC
4								
5								
6								
7		8.41						PC
8								PCR
9								PC
10		8.21						PC
11								PC
12								
13								
14		8.44						PCR
15								PC
16								PC
17								PC
18		8.33						PC
19								
20								
21		8.27						PC
22								PC
23								PC
24								PC
25		8.21						PC
26								
27								
28		8.35						PC
29								
30		8.38						PC
31								

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

Lead - 0.000287

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE LAD	PHONE # 573-204-8817	DATE 8-20-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Ellen Rodina	TITLE QAS	PHONE # 573 683 3325	DATE 8-20-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City Charleston MO.	Address Change for Owner: ☐ Billing ☐	Facility Address: City Hall 204 N. MAIN ST. Charleston MO 63834

THIS REPORT COVERS THE PERIOD: **Please place an "X" in the box beneath the appropriate quarter.**

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20____	Due by July 28th,20____	Due by October 28th,20 14	Due by January 28th,20____
☐	☐	☒	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:

					OUTFALL 001			
PARAMETER	UNITS	PERMITTED FINAL LIMITS			DATE 7-08-14 TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
		DAILY MAX	WEEKLY AVG	MONTHLY AVG				
Cyanide, Amenable to Chlorination	ug/L	*	<0.005	*		7-08-14	Grab	Lachat-CN2/Sm-4500 CNG
Arsenic, TR	ug/L	*	8	*		7-23-14	Grab	EPA-200.7 Rev 4.4
Beryllium, TR	ug/L	*	<1	*		7-23-14	Grab	EPA-200.7 Rev-4.4
Cadmium, TR	ug/L	*	<2	*		7-23-14	Grab	SM-3111 B-99
Chromium (III), TR	ug/L	*	<5	*		7-23-14	Grab	Sm-3111B/3500-Cr B-01
Chromium (VI), TR	ug/L	*	<5	*		7-07-14	Grab	Sm 3500-Cr B-01
Iron, TR	ug/L	*	250	*		7-23-14	Grab	Sm-3111 B-99
Mercury, TR	ug/L	*	<0.2	*		7-23-14	Grab	Sm 3112 B-99
Nickel, TR	ug/L	*	2.7	*		7-23-14	Grab	Sm 3111 B-99
Selenium, TR	ug/L	*	<5	*		7-23-14	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*	<2	*		7-23-14	Grab	Sm 3111 B-99
Thallium, TR	ug/L	*	<5	*		7-23-14	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Reeder	8-20-14	573-683-3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Reeder	8-20-14	5736833325	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
AUGUST 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☑ GPD ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	
1	1.030	7.03			24.0		8.04				27.3				
2															
3															
4	1.008	7.04	149	73	24.2	7.70	8.13	8	<0.050	<5	28.2				
5	1.078	7.12			24.1		8.35				28.5				
6	1.011	7.			24.7		8.42				28.4				
7	1.036	7.09			24.6		8.31				28.5				
8	1.024	6.98			24.2		8.17				28.5				
9															
10															
11	1.332	7.24	166	84	24.8	4.72	8.55	7	<0.050		28.6	<0.00200	4.6	<0.00200	<0.00200
12	980	7.28			24.7		8.41				28.5				
13	801	7.10			24.8		8.06				28.7				
14	931	7.19			24.8		8.23				27.9				
15	1.026	7.19			24.3		8.20				28.5				
16															
17															
18	1026	7.05			24.6		8.23				28.2				
19	996	7.18			23.4		8.10				28.5				
20	955	7.13	100	72	24.7	7.83	8.07	6	<0.050		28.2				
21	1.119	6.99			23.5		8.59				29.8				
22	990	7.03			23.9		8.22				28.7				
23															
24															
25	939	7.09	116	109	23.7	13.2	8.07	7	<0.050		29.3				
26	993	6.89			24.1		7.62				31.2				
27	961	7.00			23.7		8.10				30.5				
28	1.276	7.03			23.7		7.91				30.5				
29	1.089	7.12			23.5		8.12				29.9				
30															
31															
No.of Samp.	21	21	4	4	21	4	21	4	4		21				
Tot of Samp.	21.0	149	531	338	508	38.45	173	28	0.2		606				
Monthly Avg.	985		133	84.5	24.1	9.61		7	0.05		28.8				
Daily Max.	1.332	7.28	166	109	24.8	13.2	8.59	8	<0.050		31.2				
Daily Min.		6.89					7.62								
Weekly Avg.															
Percent Removal			93%	92%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			8.20					PC
2								
3								
4			8.18					PC
5								PC
6								PC
7								PCR
8			9.33					PCR
9								
10								
11			8.09					PCR
12								PC
13								PC
14								PC
15			8.63					PC
16								
17								
18			8.23					PC
19								PC
20								PC
21								PC
22			8.15					PC
23								
24								
25			8.62					PC
26								PC
27								PC
28								PC
29			8.76					PC
30								
31								

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
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3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

COMMENTS

Lead TR 0.9% <0.00200

TESTS PERFORMED BY: PLEASE PRINT: Environmental Analysis South | TITLE: Lab | PHONE#: 573-204-8817 | DATE: 9-9-14

SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT: Allen Rodney | TITLE: Opr. | PHONE#: 573 683-3325 | DATE: 9-9-14

EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
SEPTEMBER 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT						EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zi TI ug/
1															
2	1,089	7.52	133	97	21.5	8.08	8.53	7	<0.050	<5	28.2	<.002	3	<.200	<3
3	909	7.09			22.5		8.20				28.0				
4	1,232	7.18			21.9		8.26				28.5				
5	1.020	7.05			23.1		8.07				28.9				
6															
7															
8	.953	7.15	203	70	22.8		8.42	7	<0.050		26.8				
9	1.001	7.18			22.4		8.25				26.5				
10	1.183	7.10			21.7		8.13				24.3				
11	1.099	7.20			21.5		8.27				23.6				
12	1.017	6.99			22.2		8.31				23.5				
13															
14															
15	1.013	7.13	157	120	23.0	7.40	8.47	7	<0.050		23.5				
16	.912	7.09			23.4		8.40				23.4				
17	.915	7.05			23.4		8.31				22.5				
18	.988	7.04			23.2		8.46				23.5				
19	.951	6.98			23.5		8.32				23.0				
20															
21															
22	1,119	7.10	230	268	23.1	7.66	8.44	7	<0.050		23.1				
23	.966	6.95			22.4		8.21				22.5				
24	.980	6.98			23.1		8.57				24.1				
25	1.035	7.02			22.7		8.36				22.1				
26	1.046	6.98			22.5		8.42				22.9				
27															
28															
29	.833	7.03	228	114	22.8	8.47	8.01	6	<0.050		22.5				
30	.976	7.00			23.4		8.13				24.0				
31															
No.of Samp.	21	21	5	5	21	5	21	5	5		21				
Tot of Samp.	21.2	148.8	951	669	476.1	31.61	174.1	34	0.25		514.4				
Monthly Avg.	1.011		190.2	133.8	22.6	6.32		6.8	.05		24.4				
Daily Max.	1.232	7.52	230	268	23.5	8.47	8.57	7	<0.050		28.9				
Daily Min.		6.95					8.01								
Weekly Avg.															
Percent Removal			96%	95%											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l (Eff)	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2			8.25					PCR
3								PC
4			8.21					PC
5								PC
6								
7								
8			8.46					PC
9								PC
10								PC
11								PCR
12			9.11					PC
13								
14								
15			8.82					PC
16								PC
17								PC
18								PC
19			9.27					PC
20								
21								
22			9.63					PC
23								PC
24								PC
25								PC
26			9.01					PC
27								
28								
29			8.82					PC
30								PC
31								

COMMENTS

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2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis	TITLE LAB	PHONE # 573 204 8817	DATE 10-15-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Peters	TITLE Oper.	PHONE # 573 683-3325	DATE 10-15-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
OCTOBER 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zinc TR ug/L
1	.815	6.99			23.5		8.15				24.3				
2	.990	7.07			23.5		8.03				24.1				
3	.984	6.91			23.6		8.17				24.3				
4															
5															
6	1.015	7.20	105	65	23.4	7.12	8.10	16	<0.050	<5	23.5	<.002	<2	<.200	<3
7	1066	6.98			22.1		8.52				23.1				
8	1.032	7.30			22.1		8.53				21.1				
9	1.269	7.44			19.9		8.49				21.5				
10	1.296	7.21			21.2		8.46				20.8				
11															
12															
13	H														
14	1.261	7.31	371	82	19.2	15.8	8.51	15	<0.050		20.4				
15	.943	7.20			19.7		8.35				18.5				
16	.934	7.44			19.5		8.25				18.0				
17	.876	7.29			19.4		8.17				18.3				
18															
19															
20	.920	7.15	171	24	19.5	9.98	8.10	8	<0.050		18.0				
21	.993	6.99			18.3		8.33				19.8				
22	.904	7.43			20.5		8.17				12.3				
23	.938	7.37			18.2		8.35				17.0				
24	1.134	7.33			20.3		8.19				16.7				
25															
26															
27	1.049	7.05	122	55	20.1	2.80	8.24	8	<0.050		12.3				
28	1.192	7.20			20.4		8.01				18.5				
29	.962	7.27			20.1		8.15				18.0				
30	1.153	7.05			19.8		8.13				18.1				
31	1.072	7.17			18.6		8.26				18.0				
No.of Samp.	22	22	4	4	22	4	22	4	4		22				
Tot of Samp.	22.8	158.3	769	276	452.9	35.7	182.2	47	0.2		435.7				
Monthly Avg.	1.036		192.2	69	20.5	8.92		11.25	0.05		19.8				
Daily Max.	1.296	7.44	371	82	23.6	15.8	8.57	16	<0.05		23.5				
Daily Min.		6.98					8.01								
Weekly Avg.															
Percent Removal			95%	83%											

Attachment 3 Page 78 of 87

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			8.65				24.3	PC
2							24.1	PC
3							24.3	PCR
4								
5								
6			9.47				23.5	PC
7							23.1	PCR
8							21.1	PC
9							21.5	PCR
10			9.27				20.8	PCR
11								
12								
13								
14			9.51				20.4	PCR
15							18.5	PCR
16							18.3	PCR
17			9.51				18.0	PC
18								
19								
20			9.27				18.0	PC
21							19.8	PC
22							17.3	Clear
23			10.20				17.0	Clear
24							16.7	PC
25								
26								
27			9.43				17.2	PCR
28							18.5	PC
29							18.0	PC
30							18.1	PC
31			10.31				18.0	PC

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE Lab	PHONE # 573-204-8817	DATE 11-17-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Bodeen	TITLE Ope	PHONE # 573 683 3325	DATE 11-17-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston MO 63834	Address Change for Owner: ☐ Billing ☐	Facility Address: Charleston WWT LAGOON

THIS REPORT COVERS THE PERIOD: Please place an "X" in the box beneath the appropriate quarter.

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20___	Due by July 28th,20___	Due by October 28th,20___	Due by January 28th,20 15
☐	☐	☐	☒
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:

OUTFALL 001

PARAMETER	UNITS	PERMITTED FINAL LIMITS DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
Cyanide, Amenable to Chlorination	ug/L	*	<0.005	*		10-21-14	Grab	LAChat CI02/SM-4500CNG
Arsenic, TR	ug/L	*	<1.5	*		10-17-14	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*	<1	*		10-17-14	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*	<3	*		10.14.14	Grab	SM-3111 B-99
Chromium (III), TR	ug/L	*	<5	*		10-06-14	Grab	SM-3111 B/3500Cr B-01 AR
Chromium (VI), TR	ug/L	*	<5	*		10-17-14	Grab	SM-3500Cr B01
Iron, TR	ug/L	*	<20	*		10.09.14	Grab	SM-3111 B-99
Mercury, TR	ug/L	*	<0.2	*		10-23-14	Grab	SM-3112 B99
Nickel, TR	ug/L	*	<15	*		10-14-14	Grab	SM-3111 B99
Selenium, TR	ug/L	*	<10	*		10-17-14	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*	<5	*		10-14-14	Grab	SM 3111 B-99
Thallium, TR	ug/L	*	<20	*		10-17-14	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Ellen Rogers	11-17-14	573 683 3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR	DATE	PHONE NUMBER	EMAIL ADDRESS:
Ellen Rogers	11-17-14	573 683 3325	

F VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.
Poplar Bluff MO 63901

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
NOVEMBER 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT						EFFLUENT									
DAY	FLOW: MGD GPD ☑ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	
1															
2															
3	.965	7.03	138	92	18.3	8.26	8.12	8	<0.050	<5	16.0	<0.05	<2	<02	<
4	1.255	6.99			17.9		8.20				12.8				
5	1.333	7.12			18.1		8.17				12.0				
6	.952	7.12			18.4		8.46				12.9				
7	1.112	7.25			17.8		8.50				14.0				
8															
9															
10	.997	7.10	234	128	16.5	13.9	8.39	9	<0.050		11.7				
11	H														
12	.948	7.05			16.5		8.26				10.9				
13	.955	7.23			16.5		8.46				11.8				
14	1.015	7.03			16.8		8.11				12.5				
15															
16															
17	1.102	7.20	148	75	15.4	11.1	8.29	13	<0.050		6.0				
18	1.011	7.13			15.7		8.24				6.5				
19	1.022	7.20			15.5		8.53				8.5				
20	1.035	7.24			14.9		8.34				6.8				
21	1.128	7.11			16.2		8.31				8.2				
22															
23															
24	1.294	7.31	105	61	15.9	8.07	8.65	15	0.44		8.1				
25	1.170	7.24			15.8		8.53				8.5				
26	1.055	7.10			15.6		8.48				9.2				
27	H														
28	H														
29															
30															
31															
No.of Samp.	17	17	4	4	17	4	17	4	4		17				
Tot of Samp.	17.3	121.4	625	356	281.8	41.3	142	45	515		176.4				
Monthly	1.076		156.2	89	16.5	10.3		11.25	0.129		10.3				
Daily Max.	1.294	7.31	234	128	18.4	13.9	8.65	15	0.44		16.0				
Daily Min.		6.99					8.11								
Weekly Avg.															
Percent Removal			93%	87%											

Attachment 3 Page 81 of 87

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								
2								
3			9.24				18.0	PC
4							17.9	PCR
5							18.1	PCR
6			8.87				18.4	PC
7							17.8	PC
8								
9								
10			11.22				16.5	PC
11							H	H
12							16.3	PC
13							16.5	PC
14			9.61				16.5	PC
15								
16								
17			12.88				16.5	PCS
18							15.4	PC
19							15.7	PC
20			12.21				15.5	PC
21							14.9	PC
22								
23								
24			12.26				16.2	PC
25							15.9	PC
26			12.31				15.8	PC
27							H	H
28							H	H
29								
30								
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE Lab	PHONE # 573-204-8817	DATE 11-28-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Robbins	TITLE Oper.	PHONE # 573-683-3325	DATE 11-28-14
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
DECEMBER 2014	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD GPD ☒ ☐ INF.OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F (C)	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	
1	1,049	7.26	194	168	15.6	6.56	8.47	17	0.75	<5	8.9	<.002	<2	<.002	<
2	1.030	7.13			15.9		8.12				7.9				
3	1.021	7.11			15.6		8.05				7.5				
4	1,107	7.11			15.8		8.31				8.3				
5	1,156	7.01			15.2		8.63				9.5				
6															
7															
8	1,030	7.60	104	67	15.4	9.25	8.66	14	2.0		8.9				
9	1,041	7.29			15.6		8.51				8.6				
10	1,008	7.10			15.9		8.46				8.8				
11	964	7.34			15.5		8.72				8.5				
12	952	7.12			15.7		8.51				9.1				
13															
14															
15	1,112	7.22	200	133	15.8	26.7	8.45	16	3.2		8.4				
16	1,046	7.15			15.3		8.30				9.2				
17	1,022	7.18			15.2		8.34				9.0				
18	1,109	7.10			15.1		8.05				8.8				
19	986	7.27			15.5		8.29				8.5				
20															
21															
22	1,142	7.26	110	95	15.8	7.20	8.25	13	4.31		7.0				
23	1,054	7.29			16.1		8.61				7.0				
24	1,077	7.10			16.9		8.86				7.5				
25	11														
26															
27															
28															
29	1,150	7.26	143	70	16.8	9.48	8.65	5	6.21		7.3				
30	1,068	7.20			14.7		8.69				6.1				
31	1,004	7.18			15.2		8.51				5.8				
No.of Samp.	21	21	5	5	21	5	21	5	5		21				
Tot of Samp.	22.0	151	751	533	329.1	59.19	177	65	16.4		164.3				
Month Ave.	1,054		150.2	106.6	15.6	11.8		13	3.29		7.8				
Daily Max.	1,156	7.60	194	168	16.9	26.7	8.86	16	6.21		9.5				
Daily Min.		7.01					8.05								
Weekly Avg.															
Percent Removal			92%	88 %											

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	EFF DO mg/l	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1			10.51					PCR
2								PCR
3								PC
4								PCR
5			12.17					PCR
6								
7								
8			11.98					PC
9								PC
10								PC
11								PC
12			13.18					PC
13								
14								
15			10.63					PCR
16								PC
17								PC
18								PCR
19			10.41					PC
20								
21								
22								PCR
23			12.50					PC
24			12.18					PCR
25								
26								
27								
28								
29			12.10					PC
30								PC
31			12.41					PC

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
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8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis South	TITLE LAb.	PHONE # 573-204-8817	DATE 1-21-15
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Olivia Rodgers	TITLE Oper.	PHONE# 573 683 3325	DATE 1-21-15
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

14 of 15

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER POLLUTION CONTROL PROGRAM
MONTHLY MONITORING RECORD FOR WASTEWATER TREATMENT FACILITIES

NAME OF FACILITY	CITY	COUNTY/REGION
CHARLESTON WWT LAGOON	CHARLESTON, MO	MISSISSIPPI/SERO

FOR THE MONTH OF	OUTFALL NUMBER	PERMIT NUMBER	TYPE TREATMENT FACILITY
JANUARY 2015	001	MO-0120081	3 CELL AERATED LAGOON

	INFLUENT					EFFLUENT									
DAY	FLOW: MGD ☑ GPD ☐ INF. OR EFF.	PH UNITS	BOD mg/L	TOTAL SUS. SOLIDS mg/L	TEMP °F °C	BOD5 mg/L	PH SU	TOTAL SUS. SOLIDS mg/L	NH3 mg/L	O&G mg/L	SAMPLE TEMP C	Antimony TR mg/L	Copper TR ug/L	Lead TR ug/L	Zi T ug
1	H										4.5				
2	.995	7.18			14.6		8.09								
3															
4															
5	1.243	7.23	191	85	14.0	33.1	7.72	5	8.28	<5	3.7	0.000622	<2	<.200	<
6	1.089	7.04			14.3		8.06				4.1				
7	1.030	7.06			14.2		8.36				4.3				
8	1.132	7.35			14.4		8.26				4.0				
9	1.180	7.24			14.5		8.41				3.9				
10															
11															
12	1.116	7.09	572	48	14.7	23.3	8.20	5	10.4		2.8				
13	1.120	6.96			13.8		7.51				1.7				
14	1.275	7.22			12.3		8.62				1.8				
15	1.365	7.00			12.4		8.45				1.9				
16	1.064	6.63			12.8		8.16				2.6				
17															
18															
19	H														
20	1.156	7.39	173	93	13.5	32.9	8.31	3	11.4		6.1				
21	1.084	7.20			13.0		8.49				5.0				
22	1.038	7.41			12.6		8.40				5.3				
23	1.335	7.05			12.7		8.63				5.2				
24															
25															
26	1.394	7.05	60.7	58	12.3	11.3	8.35	5	11.8		5.1				
27	1.207	7.20			12.5		7.74				5.2				
28	1.208	7.15			12.3		7.83				5.1				
29	1.147	7.35			12.5		8.12				5.7				
30	1.221	7.12			12.7		7.83				6.2				
31															
No. of Samp.	20	20	4	4	20	4	20	4	4		20				
Tot of Samp.	22.3	136	482	284	266	100.6	173	18	41.88		84.2				
Monthly Avg.	1.1183		120	71	13.3	25.1		4.5	10.5		4.2				
Daily Max.		7.41	191		14.7	33.1	8.63	5	11.8		6.2				
Daily Min.		6.63					7.72								
Weekly Avg.															
Percent Removal			93%	95%											

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Attachment 3 Page 86 of 87

OPERATIONAL CONTROL PARAMETERS

DATE	PH UNITS	ALK. ml/l	DO mg/l (EFF)	SET SOLIDS RAW ml/l	SUSP. SOLIDS MIXED LIQUOR mg/l	SETTLEABILITY MIXED LIQUOR ml/l	TEMP F-C	RAIN AND WEATHER
1								H
2			13.40					PCR
3								
4								
5								PC
6			14.61					PC
7								PC
8								PC
9			13.65					PC
10								
11								
12			14.05					PC
13								C
14								PC
15								PCS
16			14.21					PC
17								
18								
19			H					H
20			12.71					PC
21								PC
22								PC
23			13.06					PC
24								R
25								R
26			12.14					PC
27								PC
28								PC
29			13.62					PC
30								
31								

COMMENTS

1. Fill out one copy of report each month and mail in original monthly for each treatment facility.
2. Mail original of report to the appropriate DNR regional office as noted in your permit and keep one copy in your files.
3. Reports must be signed by whoever performed tests and by an appropriate official.
4. In the weather column, use the following symbols: R-rain, S-snow, C-clear, P.C.-partly cloudy and O-overcast.
5. Use grab sample for pH, Temp, and D.O. Use grab samples for all operational control test.
6. Use 24 hr. composite (proportional) samples for B.O.D. 5, and Suspended Solids test unless NPDES permit indicates otherwise. Use "Standard Methods" or an approved equal for all parameters.
7. Treatment plant flow measurements may be made on either influent or effluent. Lagoon influent flow measurements need be only at the time of composite sampling of the influent. All test must be performed in accordance with NPDES Permit Conditions and Operational Control Regulation 10 CSR 20-9.010. Review your permit for specific requirements.
8. Unusual conditions, significantly affecting operations must be reported immediately to the Department of Natural Resources.
9. Representative sludge samples should be taken either before entering digesters and/or holding tanks or after removal from digesters or holding tanks.

TESTS PERFORMED BY: PLEASE PRINT Environmental Analysis	TITLE LAB	PHONE # 573-204-8817	DATE 2-18-15
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT Allen Rodgers	TITLE Opr	PHONE # 573 683-3325	DATE 2-18-15
EMAIL ADDRESS OF PERSON APPROVING REPORT (OPTIONAL):			

Attachment 3 Page 87 of 87

MISSOURI DEPARTMENT OF NATURAL RESOURCES
NPDES MONITORING REPORT FOR STORMWATER AND WASTEWATER DISCHARGES
Quarterly Sampling – Quarterly Reporting

CHARLESTON WWT LAGOON MO-0120081 MISSISSIPPI COUNTY	Owner Address: City of Charleston 204 N. Main St	Address Change for Owner: ☐ Billing ☐	Facility Address:

THIS REPORT COVERS THE PERIOD: Please place an "X" in the box beneath the appropriate quarter.

1st Quarter = January through March	2nd Quarter = April through June	3rd Quarter = July through September	4th Quarter = October through December
Due by April 28th,20 15	Due by July 28th,20____	Due by October 28th,20____	Due by January 28th,20____
☒	☐	☐	☐
NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐	NO DISCHARGE FOR QUARTER ☐

Samples Collected By:	Phone:	Analyses Performed by (LAB):	Phone:
Allen Rodgers	573-683 3325	Environmental Analysis South	573-204-8817

OUTFALL 001

PARAMETER	UNITS	PERMITTED FINAL LIMITS DAILY MAX	WEEKLY AVG	MONTHLY AVG	DATE / TIME	ANALYSIS DATE	SAMPLE TYPE	ANALYTICAL METHOD
					1-5-2015			
Cyanide, Amenable to Chlorination	ug/L	*	<0.005	*		1-08-15	Grab	Lachat CN2/SM-4500 CNG
Arsenic, TR	ug/L	*	6	*		1-13-15	Grab	EPA-200.7 Rev. 4.4
Beryllium, TR	ug/L	*	<1	*		1-13-15	Grab	EPA-200.7 Rev. 4.4
Cadmium, TR	ug/L	*	<3	*		1-15-15	Grab	SM-3111 B-99
Chromium (III), TR	ug/L	*	<5	*		1-15-15	Grab	SM 3111 B-99
Chromium (VI), TR	ug/L	*	<5	*		1-16-15	Grab	SM 3111 B99
Iron, TR	ug/L	*	339	*		1-13-15	Grab	SM-3111 B99
Mercury, TR	ug/L	*	<0.2	*		1-09-15	Grab	SM-3112 B99
Nickel, TR	ug/L	*	<15	*		1-15-15	Grab	SM 3111 B99
Selenium, TR	ug/L	*	<5	*		1-13-15	Grab	EPA-200.7 Rev. 4.4
Silver, TR	ug/L	*	<5	*		1-15-15	Grab	SM 3111 B-99
Thallium, TR	ug/L	*	<5	*		1-13-15	Grab	EPA-200.7 Rev. 4.4

SIGNATURE AND TITLE OF INDIVIDUAL PREPARING REPORT	DATE	PHONE NUMBER	EMAIL ADDRESS:
Allen Rodgers Oper.	2-18-15	573-683 3325	
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPOR (LAB)	DATE	PHONE NUMBER	EMAIL ADDRESS:
Environmental Analysis South	2-18-15	573-204-8817	

(IF VIOLATION OCCURRED, PLEASE ATTACH EXPLAINATION OF POSSIBLE CAUSE)

* - Monitor and Report

Return form to: Missouri Department of Natural Resources
Southeast Regional Office
2155 North Westwood Blvd.

ATTACHMENT 4

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901		SEMI-ANNUAL REPORT DUE: **APRIL 30TH**
PERMIT NUMBER **MO0120081**	COUNTY **MISSISSIPPI**	THIS REPORT COVERS YEAR: **October 1st, 20 10 through March 31st, 20 11**
FACILITY NAME **CHARLESTON WWT LAGOON**	PHONE #:	FACILITY ADDRESS County Rd 215
OWNER NAME City of Charleston	PHONE #: 683-3325	OWNER ADDRESS P.O. Box 216 Charleston Mo. 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in **April and October** with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

Monthly & quarterly reports have already been sent in. See attached sheet for sewer repairs during this period. We are planning to do smoke testing in portions of our system this summer.

REPORT COMPLETED BY	DATE
David Harris	4-1-11
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE
David Harris	4-1-11

MO 780-1308 (7-04)

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials	
10-19-10	Replaced 73' of 8" clay with 8" SDR35 600 BLOCK of E. CYPRESS	DH	540
12-13-10	Dug up Sanitary Sewer and Replaced aprox. 6 ft. of 6" Line at 115 W. Missouri Ave	D.R.	541
1-19-11	Dug up Sanitary Sewer and Replaced aprox. 4 ft. of 4" Line and installed Double Cleanout Risers at 301 S. Finney (Patrick Farmer House)	D.R.	541
2-17-11	Dug up Sanitary Sewer and Replaced aprox 6 ft. of 4" Line and installed Double Cleanout Risers at 508 N. Main (Swayne Byrd House) Also about 3 ft. of 6" Line	D.R.	541

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901		SEMI-ANNUAL REPORT DUE: **APRIL 30TH**
PERMIT NUMBER **MO0120081**	COUNTY **MISSISSIPPI**	THIS REPORT COVERS YEAR: **October 1st, 20 11 through March 31st, 20 12**
FACILITY NAME **CHARLESTON WWT LAGOON**	PHONE #: 233-5842	FACILITY ADDRESS County Rd. 215
OWNER NAME City of Charleston	PHONE #: 573-683-3325	OWNER ADDRESS P.O. Box 216 Charleston MO 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in **April and October** with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

Discharge monitoring reports already sent in by Allen Rodgers

REPORT COMPLETED BY	DATE
David Harris + Dennis Rapert	4-3-12
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE
David Harris	4-3-12

MO 780-1308 (7-04)

(5 Pages)

Appendix 9.6: **Sewer Line Maintenance Repair Report**

OCT. 1, 2011 TO March 31, 2012

Sewer Maintenance Log

Date	Maintenance Performed	Initials
10-4-11	WORK IS CONTINUING ON THE SANITARY SEWER MAIN ON N. SIXTH ST. FROM ABOUT THE MIDDLE OF BLOCK AT THIS DATE GOING ON TOWARDS STATE ST. REPLACING 220 FEET OF 8" SEWER MAIN PIPE - BY ROBINSON CONST. CO FINISHED THIS WEEK OF 10-10-11	D.R. 541
10-5-11	DUG UP SANITARY SEWER CAVE-IN SPOT IN 100 BLOCK OF W. TOM BROWN ST. AND REPLACED APROX. 2 FT. OF 6" LINE (HOUSE SEWER LINE) (BY CITY)	DR. 541
12-8-11	DUG UP SANITARY SEWER LINE ON S. THIRD - (BETWEEN PLANT RD. AND NAOMI) THAT FEEDS ROLWING - MOXLEY'S NEW SCALE HOUSE AND REPAIRED THE RISER (INSTALLED A NEW ONE) THAT WAS RAN OVER AND BROKEN - (BY CITY)	DR. 541
12-9-11	DUG UP SANITARY SEWER LINE AT 610 S. NINTH ST. - REPLACED APROX. 6 FEET OF 4" LINE AND INSTALLED A CLEANOUT RISER ON LINE - (DAVE MANKER HOME) (BY CITY)	D.R. 541

NEXT PAGE →

Appendix 9.6: **Sewer Line Maintenance Repair Report**

OCT. 1, 2011 TO MARCH 31, 2012

Sewer Maintenance Log

Date	Maintenance Performed	Initials
1-10-12	Dug up Sanitary Sewer Line at 202 Morgan ST. - I replaced Aprox. 3 ft. of 4" Line and installed a cleanout Riser on Line (NOTE: This house belongs to Charles David) (by City)	D.R. 541
1-10-12	Dug up Sanitary Sewer Line at 406 W. Byrd Ave. and replaced aprox. 3 ft. of 6" Line and installed a cleanout Riser on Line. (by City)	D.R. 541
1-16-12	Robinson Const. Co. started today moving in Equipment and materials to the Sewer Cave-in spot in 200 block N. Elm ST. 1-17-12 - work has begun on this Sewer Cave in.) (1-19-12 Robinson Const. Co. has begun to Lay Sewer main pipe at the manhole at the Lift Station going South towards Cleveland ST.) (2-1-12 - work is continuing Laying 10" Sewer main pipe 2-9-12 - They finished Laying the 10" sewer main pipe today for a total of 202 feet of pipe layed. 2-10-12 - Staited Laying the water main back in this section that had to be removed in order to Lay the Sewer.	D.R. 541
1-19-12 cont. work		
1-30-12 cont. work		
2-1-12 cont. work		
2-9-12 finished sewer		
2-10-12 started laying water main back		

(2)

NEXT Page →

Appendix 9.6: Sewer Line Maintenance Repair Report

OCT. 1, 2011 TO march 31, 2012 Sewer Maintenance Log

Date	Maintenance Performed	Initials
1-19-12 by CITY	Dug up Sanitary Sewer Line at 903 Grand Ave. - replaced aprox. 4 ft. of 4" Line and installed Cleanout Riser on Line.	D.R. 541
1-24-12	Dug up Sanitary Sewer Line at 811 Warren ST. and Cut a section of 4" Line into and installed a 4" Cap on Line. (Note: house is being torn down (By City)	D.R. 541
2-9-12	Dug up Sanitary Sewer Line at 311-313 W. Commercial ST. replaced aprox. 4 ft. of 6" Sewer Line and installed a 6" Cleanout Riser on Line and installed a 6" backflow Valve on Line. (By City)	D.R. 541
2-14-12	Work started Today on the Sanitary Sewer MAIN Cave-in - in The 300 block of W. Cypress ST. They started at the manhole Thats in The middle of the block (between Green and Locust) ON This Project They Layed aprox. 262 feet of 8" Line, Laying pipe Towards Green ST. (by Robinson Const.)	D.R. 541
Completed on 2-28-12		

(2)

Appendix 9.6: Sewer Line Maintenance Repair Report

OCT. 1, 2011 TO March 31, 2012

Sewer Maintenance Log

Date	Maintenance Performed	Initials
2-17-12	Dug up Sanitary Sewer Line at 310 W. Commercial ST. [redacted] AND installed a cleanout Riser (by City)	D.R. S.M.
3-20-12	Dug up Sanitary Sewer Line at 203 S. Green ST. Replaced 10 feet of 4" Sewer Line and installed a Cleanout Riser on Line. (by City)	

(4)

Next Page

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
2-24-12	Dug up Sanitary sewer main in 800 block of Ball St. and replaced aprox. 3 ft. of 8" Line - installed a 8" x 4" Wye (by City)	D.R. 541
2-28-12	Work started Today on The Sanitary sewer main cave-in - on S. Green - starting at manhole at W. Cypress going South. They Layed	D.R. 541
3-5-12 (work is continuing)	aprox. 248 feet of 8" Line (by Robinson Const)	
3-12-12 (work is continuing on this section)	(work completed on 3-15-12)	
3-20-12	Work began Today on The Sanitary sewer main cave-in - on Helena St. (They started at Fifth St. going West	D.R. 541
3-26-12 (work of this section completed)	on Helena towards S. Virginia St. They Layed aprox. 145 feet of 8" Line. (by Robinson Const.)	
3-27-12	Work began Today on The Sanitary sewer main cave-in on Helena St. (They started at The manhole at Seventh St. goin West towards Sixth St. up to this point of this date 3-31-12 They Layed aprox. 65 feet of 8" Line (by Robinson Const.)	D.R 541

(5)

WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901	SEMI-ANNUAL REPORT DUE: OCTOBER 31st

PERMIT NUMBER	COUNTY	THIS REPORT COVERS YEAR:
MO0120081	MISSISSIPPI	April 1st, 20 12 through September 30th, 20 12

FACILITY NAME	PHONE #:	FACILITY ADDRESS
CHARLESTON WWT LAGOON	233-5842	County Rd 215

OWNER NAME	PHONE #:	OWNER ADDRESS
City of Charleston	573-683-3325	P.O. Box 216 Charleston Mo 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in **April and October** with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

Monthly & Quarterly reports already sent in.

REPORT COMPLETED BY	DATE
Denis Rapert	10-1-12
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE
David Harris	10-1-12

MO 780-1808 (7-04)

Appendix 9.6: Sewer Line Maintenance Repair Report

APRIL 1, 2012 TO SEPT. 31, 2012

TURNED IN TO 540 ON 9-26-12

Sewer Maintenance Log

Date	Maintenance Performed	Initials
4-2-12	Work is Contaning on the Sanitary Sewer Main Cave-in (replacement) in 600 block of Helena ST. going West	D.R. 541
4-5-12 Work cont. towards 6th	Towards 6th ST. They Layed aprox. 308 feet of 8" Line. work finished Today at 6th and Helena - 4-9-12 (by Robinson Const.)	
4-10-12 Finished with this section on Mon. 4-16-12	Work started Today on the Sanitary Sewer main Cave-in (Replacement) in block of S. 6th ST. starting at Naomi ST. and going North Towards Helena ST. They Layed aprox. 202 feet of 8" Line (by Robinson Const.)	D.R. 541
4-17-12	Work started Today on the Sanitary Sewer main cave-in (Replacement) in 700 block of Helena ST. starting at manhole Near 7th ST. and going east towards 8th ST. They layed aprox. 321 feet of 10" Line. work finished Today 4-25-12 on this Section (by Robinson Const.)	D.R. 541

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
4-26-12	Work started today on the Sanitary Sewer Main - Cave-in (Replacement) 800 block of Helena St. Starting at manhole at 8th St. and going east towards 9th St. They laied aprox. 361 feet of 10" Line. Work was finished today - 5-2-12 (by Robinson Const.)	D.R. 541
4-24-12	Dug up Sanitary sewer at 217 N. Locust St. and replaced aprox. 3 feet of 6" Line and aprox. 4 feet of 4" Line (out in street) (by City)	D.R. 541
5-3-12	Work started today on the Sanitary Sewer Main - Cave-in (Replacement) in 100 Block of Danforth St. Starting at Main St. and going east towards First St. They laied aprox. 387 feet of 8" Line. (Work finished today 5-23-12) (by Robinson Const.)	D.R. 541
5-17-12 work is continuing on Danforth		

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
5-29-12	Work started today on the Sanitary Sewer Main Cave-in (Replacement) in 100 block of W. Tom Brown St. - starting at Main St. and going west towards the manhole at Tier Alley. They layed aprox. 145 feet of 10" Line	D.R. 541
6-7-12 completed	Work on this section was completed today - 6-7-12 and they moved Equipment to W. Marshall & Green (by Robinson Const.)	
6-11-12	Work started today on the Sanitary Sewer Main Cave-in (Replacment) at W. Marshall St. and S. Green St. laying 8" pipe across all 4 lanes of W. Marshall. They layed aprox. 73 feet of pipe. Worked finished on this section 6-21-12 (by Robinson Const.)	D.R. 541
6-18-12	Repaired 4" Sanitary Sewer at 607 Helena St. Used Aprox 2 feet of 4" sch. 40 pipe (by City 541)	D.R. 541

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
6-21-12	STARTED MOVING EQUIPMENT TO THE SANITARY SEWER (replacement) JOB ON STATE ST. STARTING AT 6TH ST. AND going WEST TOWARDS 5TH ST. ACTUAL WORK ON THIS PART STARTED ON 6-25-12. They LAYED aprox. 397 feet of 8" LINE. (WORKED FINISHED TODAY 7-16-12) (by Robinson CONST.)	D.R. 541
7-16-12 AND 6TH Helena	STARTED moving EQUIPMENT TO 5TH AND Helena ST. TO The SANITARY sewer (replacement) job.	D. R. 541
7-17-12	WORKED actually STARTED Today They LAYED aprox. 207 feet TOTAL of 8" LINE. (WORK FINISHED TODAY - 7-19-12) (by Robinson CONST.)	
[redacted]		
7-23-12	WORK STARTED Today ON The Sewer Cave-in (Replacement) Job at Cleveland and Johnson ST. They LAYED aprox: 39 feet of 8" LINE. From manhole TO the east AND 30 feet TO the North Completed also (by Robinson CONST.) Today 7-23-12	541 D.(

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
7-24-12	work started today on the sewer cave-in (replacement) job at Cleveland and Locust. They layed aprox. 35 feet of 8" line from the manhole going east. (by Robinson const.)	D.R. 541
8-22-12	Dug up sanitary sewer line at 409 Naomi St. and replaced aprox. 4 feet of 4" line and installed a 4" cleanout riser on line. (by City)	D.R. 541
8-30-12	Dug up sanitary sewer line at 305 E. Byrd Ave. and replaced aprox 6 feet of 4" line and installed a 4" cleanout riser on line. (by City)	D.R. 541
9-7-12	Dug up sanitary sewer line at 1303 E. Commercial - (Jeff Renard house), and replaced aprox. 10 feet of 4" line. (by City)	D.R. 541

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901		SEMI-ANNUAL REPORT DUE: APRIL 30TH
PERMIT NUMBER MO0120081	COUNTY MISSISSIPPI	THIS REPORT COVERS YEAR: October 1st, 20 12 through March 31st, 20 13
FACILITY NAME CHARLESTON WWT LAGOON	PHONE #: ~~683-3325~~ 233-5842	FACILITY ADDRESS County Rd. 215
OWNER NAME City of Charleston	PHONE #: 683-3325	OWNER ADDRESS P.O. Box 216 Charleston Mo. 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in **April and October** with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

Monthly + Quarterly reports already sent in.

We have recieved a report from Vision-Sewer were we smoke tested 34,353' of sanitary Sewer and found 20 defects, these were all cleanout tops broken off and we will repair ourselves. The smoke test was performed in zones 7 through 19 in our Cities. We also had 83 manholes inspected in zone 7-19 and found that 19 manholes had some infiltration. We plan to line these manholes and smoke test zone 5 + 6 this fiscal year.

REPORT COMPLETED BY	DATE
David Harris	4-11-13
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE
David Harris	4-11-13

MO 780-1308 (7-04)

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
2-11-13	Dug up Sanitary Sewer Line and replaced aprox. 10 feet of 4" Line and installed a cleanout Riser at 902 State St (by City)	D.R. 541
2-14-13	Dug up Sanitary Sewer Line and replaced aprox. 3 feet of 4" Line and installed a 4" cleanout Riser at 212 South St. (by City)	D.R. 541
2-27-13	Dug up Sanitary Sewer Line and replaced aprox. 3 feet of 4" Line and installed a 4" cleanout Riser at 612 Paul St. (by City)	D.R. 541
2-28-13	Dug up Sanitary Sewer Line and replaced aprox. 6 feet of 4" Line and installed a 4" cleanout Riser at 301 E. Ada St. (by City)	D.R. 541
3-7-13	Dug up Sanitary Sewer Line and replaced aprox. 3 feet of 4" Line and installed a Cleanout Riser at 412 N. Elm (by City)	D.R. 541

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
3-8-13	Dug up Sanitary sewer Line and replaced aprox. 3 feet of 4" Line and installed a cleanout Riser at 1302 Warde Rd. (by City)	D.R. 541
3-19-13	Dug up Sanitary Sewer Line and replaced aprox. 7 feet of 4" Line, at 207 N. 6th (by City)	D.R. 541

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
11-29-12	Dug up Sanitary Sewer Line at 107 Clayton (Donnie Sams) and replaced aprox. 5 feet of 4" Line and installed Double 4" Cleanout Risers on Line. (by City)	D.R. 541
11/30/12	Dug up Sanitary Sewer Line at 107 N. Seventh St. - (Russell Borders) and replaced 10 ft. of 4" Line. (by City)	D.R. 541
12/5/12	Dug up Sanitary Sewer Line at 713 N. Main Rd. and replaced aprox. 20 feet of 4" Line and installed a Cleanout Riser on Line. (by City)	D.R. 54
1/3/13	Dug up Sanitary Sewer Line at 209 E. Ada St. and replaced aprox. 4 feet of 4" Line and installed 2 Cleanout Risers on Line. (by City)	D.R. 541
1/29/13	Dug up Sanitary Sewer Line at 900 Sherman St. and replaced aprox. 4 feet of 4" Line and installed a Cleanout Riser on Line. (by City)	D.R. 541

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901	SEMI-ANNUAL REPORT DUE: OCTOBER 31st

PERMIT NUMBER	COUNTY	THIS REPORT COVERS YEAR:
MO0120081	MISSISSIPPI	April 1st, 20 13 through September 30th, 20 13

FACILITY NAME	PHONE #:	FACILITY ADDRESS
CHARLESTON WWT LAGOON	233-5842	County Rd 215

OWNER NAME	PHONE #:	OWNER ADDRESS
City of Charleston	573-683-3325	P.O. Box 216 Charleston Mo 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in **April and October** with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

DMR's already sent in, monthly.
also I have included a map of the smoke testing + manhole inspection we did in 2012 and we are going to do in 2013.

REPORT COMPLETED BY	DATE
David Harris	10-2-13
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE
David Harris	10-2-13

MO 780-1808 (7-04)

Appendix 9.6: Sewer Line Maintenance Repair Report

APRIL 1, 2013 TO SEPT. 30, 2013

Sewer Maintenance Log

Date	Maintenance Performed	Initials
4/15/13	Dug up sanitary sewer line and cut into and capped it and cleanout repaired to the old gas station on outer Rd just off of County Rd. 211 (gas station was torn down)	DR 541
4/15/13	Repaired a broken sanitary sewer cleanout at the Las Brisas Mexican Restaurant on Story St.	D.R 541
4/15/13	Repaired 2 broken sanitary sewer cleanouts at the Taste Wood Chinese restaurant off of E. Marshall St.	DR 54
4/15/13	Dug up the old sewer line and cut it into and installed new 4" cleanout and stubbed out new 4" pipe at the empty lot on E. Marshall St. just east of Flying J Truckstop (Note - a new building is going to be built here later)	D.R. 541
4/15/13	Repaired a broken sanitary sewer cleanout at 604 Hillsdale Ave.	DR 54

Appendix 9.6: Sewer Line Maintenance Repair Report

APRIL 1, 2013 TO SEPT. 30, 2013

Sewer Maintenance Log

Date	Maintenance Performed	Initials
4/15/13	Repaired a broken Sanitary sewer cleanout at 608 Hillsdale Ave.	D.R. 54,
4/16/13	Repaired 2 broken Sanitary Sewer cleanouts at 1508 E. Commercial ST.	D.R. 54,
4/16/13	Repaired a broken Sanitary sewer cleanout at 1410 E. Cypress ST.	D.R. 54
4/16/13	Repaired a broken Sanitary sewer cleanout at 1408 E. Cypress ST.	D.R. 54
4/17/13	Repaired a broken Sanitary sewer cleanout at Boomland on Highway 105	D.R. 54,
4/17/13	Repaired a broken Sanitary sewer cleanout at the rear of the a/co store in charleston Plaza	D.R. 54
4/23/13	Dug up the existing 6" clay Sanitary Sewer line at the old water plant site off of Moore ST. and Layed 3 feet of 6" sch. 40 pipe and installed a 6" cleanout (This is for a new building to be built later for the City	D.R. 54

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
4/25/13	Dug up 4" Sanitary Sewer Line That went to 718 N. Main Rd. which is now an empty lot and we cut it into and capped it. (To disconnect sewer service to lot)	D.R. 541
4/29/13	Dug up 4" Sanitary sewer Line and replaced aprox. 3 feet of Line and installed a cleanout Riser at 1004 State St.	D.R. 541
5/9/13	Dug up 4" Sanitary Sewer Line and installed a New cleanout Riser on Line at 708 Sherman St.	D.R. 541
6/6/13	Dug up The Sanitary sewer main Cave-in - in 300 block of N. Heggie St. - we Replaced aprox 15 feet of 8" Line and installed a 8"x6" Wye and Layed aprox. 4 feet of 6" Line to connect service Line back up.	D.R. 541
6/14/13	Layed 160 feet of 6" Sanitary sewer Line from Cypress across The lot to where The New Restroom Facility is being built at Rolwing park and also installed 2- 6" cleanout Risers.	D.R 541

Appendix 9.6: Sewer Line Maintenance Repair Report

Sewer Maintenance Log

Date	Maintenance Performed	Initials
7/7/13	(SUNDAY) INSTALLED a 4" CLEANOUT RISER ON SEWER LINE LOOKING TOWARDS CITY PROPERTY - AS THE PROPERTY OWNER ALREADY HAD THE OLD SEWER LINE DUG UP AND WAS REPLACING IT, SO I INSTALLED A RISER TO BENEFIT THE CITY PROPERTY.	D.R. (54)
7/17/13	DUG UP SANITARY SEWER AND REPLACED APROX 10 FEET OF 4" LINE AT 1412 E. COMMERCIAL	D.R (54)
8/14/13	DUG UP SANITARY SEWER AND REPLACED APROX. 20 FEET OF 4" LINE AT 217 N. ELM ST.	D.R (54)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901		SEMI-ANNUAL REPORT DUE: APRIL 30TH
PERMIT NUMBER MO0120081	COUNTY MISSISSIPPI	THIS REPORT COVERS YEAR: October 1st, 20 13 through March 31st, 20 14
FACILITY NAME CHARLESTON WWT LAGOON	PHONE #: 233-5842	FACILITY ADDRESS County Rd. 215
OWNER NAME City of Charleston	PHONE #: 683-3325	OWNER ADDRESS P.O. Box 216 Charleston Mo 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in April and October with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

Monthly DMR's already sent in.
On this Report period we once tested zones 1, 2, & 3 which is 42,357 linier feet. & inspected 95 manhoes. in which 4 manhoes found to be leaking. We hired Vision-Sewer to grout & seal for us.

REPORT COMPLETED BY	DATE
David Harris	4-1-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	DATE
David Harris	4-1-14

MO 780-1308 (7-04)

Appendix 9.6: Sewer Line Maintenance Repair Report

OCT. 1, 2013 TO March 31, 2014

Sewer Maintenance Log

Date	Maintenance Performed	Initials
10/29/13	Dug up Sanitary Sewer Line and replaced 10 feet of 4" Line and installed a cleanout Riser on Line at 702 State St.	D.R. (541)
11/14/13	Dug up Sanitary Sewer Line and replaced 20 feet of 4" Line and installed a cleanout Riser on Line at 900 Grand Ave.	D.R. (541)

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM – WATER POLLUTION BRANCH

SEMI-ANNUAL INFILTRATION & INFLOW REPORT

MAIL TO: MISSOURI DEPARTMENT OF NATURAL RESOURCES SOUTHEAST REGIONAL OFFICE 2155 NORTH WESTWOOD BLVD POPLAR BLUFF, MO 63901	SEMI-ANNUAL REPORT DUE: OCTOBER 31st

PERMIT NUMBER	COUNTY	THIS REPORT COVERS YEAR:
MO0120081	MISSISSIPPI	April 1st, 20 14 through September 30th, 20 14
FACILITY NAME	**PHONE #:**	**FACILITY ADDRESS**
CHARLESTON WWT LAGOON	333-5842	County Rd 215
OWNER NAME	**PHONE #:**	**OWNER ADDRESS**
City of Charleston	573-683-3325	P.O. Box 216 Charleston Mo 63834

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in April and October with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

Please submit additional pages if needed.

Monthly DMR's already sent in.
I have attached our I/I assessment update.

REPORT COMPLETED BY	DATE
David Harris	10-1-14
SIGNATURE OF OWNER OR DESIGNEE APPROVING REPORT	**DATE**
David Harris	10-1-14

MO 780-1808 (7-04)

CMOM or I/I Assessment Update
May 1, 2014

WORK TO BE DONE

Original Plan prepared in 2010 was to inspect the following:

Year	Gravity Main Smoke Testing	Manhole Inspections	Gravity Main CCTV Inspection
2012	37,498 L.F.	94 Ea.	14,654 L.F.
2013	35,925 L.F.	86 Ea.	15,379 L.F.
2014	38,798 L.F.	95 Ea.	15,166 L.F.
2015	40,150 L.F.	91 Ea.	15,231 L.F.

To Date we have inspected:

Year	Gravity Main Smoke Testing	Manhole Inspections	Gravity Main CCTV Inspection
2012	38,649 L.F.	111 Ea.	0 L.F.
2013	44,650 L.F.	105 Ea.	0 L.F.

We are contracting to inspect the following this year:

Year	Gravity Main Smoke Testing	Manhole Inspections	Gravity Main CCTV Inspection
2014	71,479 L.F.	203 Ea.	Approx 5,500 L.F.

The Gravity Main CCTV inspection quantities will be based upon the defects found in the 2012, 2013, and 2014 smoke testing results. If funds aren't available in 2014 to complete CCTV inspections, additional work may be budgeted for 2015 to finalize inspections.

DEFECTS FOUND

From the past two years inspections:

Year	Smoke Testing Defects Found	Smoke Testing Defects Repaired	Manhole Defects Found	Manhole Defects Repaired
2012	20	17	20	4
2013	65	56 (proposed)	16	0 (proposed)

The only repairs contracted to outside contractors so far have been the 4 manholes that were grouted. Majority of defects found have been minor and repaired by City personnel.

Appendix 9.6: Sewer Line Maintenance Repair Report

April 1, 2014 To Sept. 30, 2014

Sewer Maintenance Log

Date	Maintenance Performed	Initials	
4-8-14	Repaired a sanitary sewer cave-in spot in front of 603 S. Locust St. in the street	D.R.	541
5-2-14	Installed 2 - 4" cleanout risers on sewer line at 204 N. First St. (Charleston Chiropractic)	D.R.	541
5-7-14	Replaced approx. 15 feet of 4" sewer line and installed a cleanout riser on line at 506 S. Ninth St.	D.R.	541
5-13-14	Repaired broken sewer riser top at Finney & W. Marshall	D.R.	541
5-13-14	Repaired a broken sewer riser top at 807 Vine St.	D.R.	541
5-13-14	Repaired broken sewer riser top at 607 Lee Ave.	D.R.	541
5-14-14	Repaired broken sewer riser top at 410 N. Green St.	D.R.	541
5-14-14	Repaired broken sewer riser top at 215 Cleveland St.	D.R.	541

Appendix 9.6: Sewer Line Maintenance Repair Report

APRIL 1, 2014 TO SEPT. 30, 2014

Sewer Maintenance Log

Date	Maintenance Performed	Initials
5-14-14	Repaired broken sewer Riser Top at 302 N. Elm ST.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 411 N. Hessie ST.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 405 W. Byrd Ave.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 413 W. Byrd Ave.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 507 Cleveland ST.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 105 N. Hessie ST.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 711 Cleveland ST.	D.R. 541
5-14-14	Repaired broken sewer Riser Top at 202 Cleveland ST.	D.R. 541
5-15-14	Repaired broken sewer Riser Top at 403 W. Ironbanks	D.R. 541
5-15-14	Repaired broken sewer Riser Top at 307 W. Ironbanks	D.R. 541

(2)

Appendix 9.6: Sewer Line Maintenance Repair Report

APRIL 1, 2014 TO SEPT. 30, 2014

Sewer Maintenance Log

Date	Maintenance Performed	Initials
5-15-14	Repaired broken Sewer Riser Top at 609 S. Locust ST.	D.R. 541
5-15-14	Repaired 2 broken sewer Riser Tops at 217 N. Locast ST.	D.R. 541
5-15-14	Repaired 2 broken sewer Riser Tops at 209 N. Locast ST.	D.R. 541
5-15-14	Repaired broken Sewer Riser Top at 400 W. Commercial ST.	D.R. 541
5-15-14	Repaired broken Sewer Riser TOP at 108 N. ELM ST.	D R 541
5-15-14	Repaired broken Sewer Riser Top at 118 N. ELM ST	D.R 541
7-19-14	Saturday - Dug up Sanitary Sewer Line and replaced aprox. 10 ft. of 4" Line and installed a 4" cleanout Riser on Line at 103 N. Seventh ST.	D.R. 541
7-20-14	Sunday - Dug up Sewer Line in Street in front of 603 S. Locust ST. (we had to put down well points to pump ground water and we layed aprox 8 ft. of 4" Line from main up and to curb and tied it back in to house	D.R. 541

(3)

Appendix 9.6: Sewer Line Maintenance Repair Report

APRIL 1, 2014 TO SEPT. 30, 2014

Sewer Maintenance Log

Date	Maintenance Performed	Initials
8-25-26-27-14	Dug up Sanitary Sewer Manhole and main Line at Corner of S. Locust ST and W. Cypress ST. and replaced 8" Line in the intersection and replaced the Manhole with New one.	D.R 541

(4)

Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
City of Charleston	MO-0120081	4-27-11	4:30 ☐ a.m. ☒ p.m.
COUNTY	**AUTHORIZED REPRESENTATIVE REPORTING**	**TELEPHONE NUMBER WITH AREA CODE**	**DNR OFFICE AND PERSON CONTACTED**
Miss	David Harris	573-233-5842	John Chronister

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
4-27-11	8:30 ☒ a.m. ☐ p.m.	4-28-11	1:30 ☐ a.m. ☒ p.m.

Estimated volume of wastewater discharged (gallons): 200 -

Estimated rate of discharge in gallons per minute: less than 1 gpm

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location: corner of Commercial & 5th St.
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 501 E Commercial
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain ☐ Rain or Snow Melt ☐ Vandalism
☐ Power Outage ☐ Plugged Sewer ☐ Broken Sewer
☐ Equipment Failure ☒ Widespread Flooding ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break ☐ Head Works ☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow ☐ Drying Beds ☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling ☐ Lift Station ☐ Aeration/Biological Treatment
☒ Manhole ☐ Clarifier/Filter/Batch Reactor ☐ Construction SSO
☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil
☐ Ditch. Name of surface water it drains to:
☒ Storm sewer. Name of surface water it drains to: Ditch 13
☐ Distance to stream if not yet reached (feet): ft.
☐ Surface water direct discharge (Name of stream):
☐ Discharge entering losing stream or sinkhole
☐ Nearby public drinking water intake
☐ Other, describe:
Name of public drinking water intake:
Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:
☐ Fish kill or other impacted species
☐ Nearby beach or other public area
Name of beach or public area:
Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☒ Yes ☐ No
Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):
See "Narrative Description" on back page to add additional details.

Clean up performed by

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

Heavy rain over short period of time + rising ground water.

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes) ☐ a.m. ☐ p.m.	End date	Time (to nearest 15 minutes) ☐ a.m. ☐ p.m.
4-22-11		4-27-11	

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy)	Amount of snow melt (estimated inches melted)
13 + inches of rain Time period of rainfall: Hours Minutes	

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

We installed a new 10 hp pump in 6th St lift station + plan to rebuild the station.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Work Director
Authorized representative signature	**Date**
David Harris	4-29-11

MO 780-0000 (mm-yy) Page 2

Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	4-27-11	4:30 ☐ a.m. ☒ p.m.
COUNTY	**AUTHORIZED REPRESENTATIVE REPORTING**	**TELEPHONE NUMBER WITH AREA CODE**	**DNR OFFICE AND PERSON CONTACTED**
Miss	David Harris	573-[illegible]233-5842	John Chromatz

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
4-27-11	8:30 ☒ a.m. ☐ p.m.	4-28-11	1:30 ☐ a.m. ☒ p.m.

Estimated volume of wastewater discharged (gallons): 100 -

Estimated rate of discharge in gallons per minute: Just enough to keep the top wet

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location: Corner of Matthews & Commercial
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 365 E Commercial
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain	☐ Rain or Snow Melt	☐ Vandalism
☐ Power Outage	☐ Plugged Sewer	☐ Broken Sewer
☐ Equipment Failure	☒ Widespread Flooding	☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break	☐ Head Works	☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow	☐ Drying Beds	☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling	☐ Lift Station	☐ Aeration/Biological Treatment
☒ Manhole	☐ Clarifier/Filter/Batch Reactor	☐ Construction SSO
		☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil	☐ Discharge entering losing stream or sinkhole
☐ Ditch. Name of surface water it drains to:	☐ Nearby public drinking water intake
☒ Storm sewer. Name of surface water it drains to: Ditch 13	☐ Other, describe:
☐ Distance to stream if not yet reached (feet): ft.	Name of public drinking water intake:
☐ Surface water direct discharge (Name of stream):	Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:	☐ Nearby beach or other public area
☐ Fish kill or other impacted species	Name of beach or public area:
	Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☒ Yes ☐ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

Heavy rain over a short period of time & rising ground water.

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes) ☐ a.m. ☐ p.m.	End date	Time (to nearest 15 minutes) ☐ a.m. ☐ p.m.
4-22-11		4-27-11	

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy)	Amount of snow melt (estimated inches melted)
13+ inches of rain	
Time period of rainfall: Hours Minutes	

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

These 3 manholes run to the same lift Station 6 & 5 + we installed trash pump.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	4-29-11

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	4-27-11	4:30 ☐ a.m. ☒ p.m.
COUNTY	**AUTHORIZED REPRESENTATIVE REPORTING**	**TELEPHONE NUMBER WITH AREA CODE**	**DNR OFFICE AND PERSON CONTACTED**
Miss	David Harris	573-293-5842	John Chromik

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
4-27-11	8:30 ☒ a.m. ☐ p.m.	4-28-11	1:30 ☐ a.m. ☒ p.m.

Estimated volume of wastewater discharged (gallons): 100 –

Estimated rate of discharge in gallons per minute: less than 1 gpm

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 301 Hunter St.
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain	☐ Rain or Snow Melt	☐ Vandalism
☐ Power Outage	☐ Plugged Sewer	☐ Broken Sewer
☐ Equipment Failure	☒ Widespread Flooding	☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break	☐ Head Works	☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow	☐ Drying Beds	☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling	☐ Lift Station	☐ Aeration/Biological Treatment
☒ Manhole	☐ Clarifier/Filter/Batch Reactor	☐ Construction SSO
		☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course	
☐ Runs on ground and absorbs into the soil	☐ Discharge entering losing stream or sinkhole
☐ Ditch. Name of surface water it drains to:	☐ Nearby public drinking water intake
☒ Storm sewer. Name of surface water it drains to: Ditch 13	☐ Other, describe:
☐ Distance to stream if not yet reached (feet): ft.	Name of public drinking water intake:
☐ Surface water direct discharge (Name of stream):	Distance to public drinking water intake (feet): ft.

Impacts	
Length of impact downstream:	☐ Nearby beach or other public area
☐ Fish kill or other impacted species	Name of beach or public area:
	Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☒ Yes ☐ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

This was the last manhole on sewer main that goes to 6th St lift Station.

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes) ☐ a.m. ☐ p.m.	End date	Time (to nearest 15 minutes) ☐ a.m. ☐ p.m.
4-22-11		4-27-11	

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy)	Amount of snow melt (estimated inches melted)
13+ inches	
Time period of rainfall: Hours Minutes	

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Work Directo
Authorized representative signature	**Date**
David Harris	4-29-11

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-120081	5-2-11	9:00 ☒ a.m. ☐ p.m.

COUNTY	AUTHORIZED REPRESENTATIVE REPORTING	TELEPHONE NUMBER WITH AREA CODE	ONE OFFICE AND PERSON CONTACTED
Miss	David Harris	573-293-5842	John Grant

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☐ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
5-2-11	7:00 ☒ a.m. ☐ p.m.	5-3-11	8:00 ☐ a.m. ☒ p.m.

Estimated volume of wastewater discharged (gallons): 1000

Estimated rate of discharge in gallons per minute: 1

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 601 W. Marshall
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain	☐ Rain or Snow Melt	☐ Vandalism
☐ Power Outage	☐ Plugged Sewer	☐ Broken Sewer
☐ Equipment Failure	☒ Widespread Flooding	☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break	☐ Head Works	☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow	☐ Drying Beds	☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling	☐ Lift Station	☐ Aeration/Biological Treatment
☒ Manhole	☐ Clarifier/Filter/Batch Reactor	☐ Construction SSO
		☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil	☐ Discharge entering losing stream or sinkhole
☐ Ditch. Name of surface water it drains to:	☐ Nearby public drinking water intake
☒ Storm sewer. Name of surface water it drains to: 14	☐ Other, describe:
☐ Distance to stream if not yet reached (feet): ft.	Name of public drinking water intake:
☐ Surface water direct discharge (Name of stream):	Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:	☐ Nearby beach or other public area
☐ Fish kill or other impacted species	Name of beach or public area:
	Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☐ Yes ☒ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes)	End date	Time (to nearest 15 minutes)
4-30-11	3:00 ☐ a.m. ☒ p.m.	5-3-11	7:00 ☒ a.m. ☐ p.m.

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy)	Amount of snow melt (estimated inches melted)
7+ inches Time period of rainfall: Hours Minutes	

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	5-6-11

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	5-2-11	9:00 ☒ a.m. ☐ p.m.

COUNTY	AUTHORIZED REPRESENTATIVE REPORTING	TELEPHONE NUMBER WITH AREA CODE	ONE OFFICE AND PERSON CONTACTED
Miss	David Harris	573-239-5842	John Chronister

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☐ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
5-2-11	7:00 ☒ a.m. ☐ p.m.	5-4-11	7:00 ☒ a.m. ☐ p.m.

Estimated volume of wastewater discharged (gallons): 1000

Estimated rate of discharge in gallons per minute:

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 300 Hunter St
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain	☐ Rain or Snow Melt	☐ Vandalism
☐ Power Outage	☐ Plugged Sewer	☐ Broken Sewer
☐ Equipment Failure	☒ Widespread Flooding	☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break	☐ Head Works	☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow	☐ Drying Beds	☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling	☐ Lift Station	☐ Aeration/Biological Treatment
☒ Manhole	☐ Clarifier/Filter/Batch Reactor	☐ Construction SSO
		☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil	☐ Discharge entering losing stream or sinkhole
☐ Ditch. Name of surface water it drains to:	☐ Nearby public drinking water intake
☒ Storm sewer. Name of surface water it drains to: 14	☐ Other, describe:
☐ Distance to stream if not yet reached (feet): ft.	Name of public drinking water intake:
☐ Surface water direct discharge (Name of stream):	Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:	☐ Nearby beach or other public area
☐ Fish kill or other impacted species	Name of beach or public area:
	Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☐ Yes ☒ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes)	End date	Time (to nearest 15 minutes)
4-30-11	3:00 ☐ a.m. ☒ p.m.	5-3-11	7:00 ☒ a.m. ☐ p.m.

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy): 7+ inches

Time period of rainfall: Hours Minutes

Amount of snow melt (estimated inches melted)

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	5-6-11

MO 780-0000 (mm-yy) Page 2

Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	5-2-11	9:00 ☒ a.m. ☐ p.m.

COUNTY	AUTHORIZED REPRESENTATIVE REPORTING	TELEPHONE NUMBER WITH AREA CODE	DNR OFFICE AND PERSON CONTACTED
Miss	David Harris	573-333-5842	John Chromik

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
5-2-11	7:00 ☒ a.m. ☐ p.m.	5-4-11	7:00 ☐ a.m. ☒ p.m.

Estimated volume of wastewater discharged (gallons): 1000

Estimated rate of discharge in gallons per minute: 1

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 800 Naomi St.
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain ☐ Rain or Snow Melt ☐ Vandalism
☐ Power Outage ☐ Plugged Sewer ☐ Broken Sewer
☐ Equipment Failure ☒ Widespread Flooding ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break ☐ Head Works ☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow ☐ Drying Beds ☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling ☐ Lift Station ☐ Aeration/Biological Treatment
☒ Manhole ☐ Clarifier/Filter/Batch Reactor ☐ Construction SSO
☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil
☐ Ditch. Name of surface water it drains to:
☒ Storm sewer. Name of surface water it drains to: Ditch 14
☐ Distance to stream if not yet reached (feet): ft.
☐ Surface water direct discharge (Name of stream):
☐ Discharge entering losing stream or sinkhole
☐ Nearby public drinking water intake
☐ Other, describe:
Name of public drinking water intake:
Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:
☐ Fish kill or other impacted species
☐ Nearby beach or other public area
Name of beach or public area:
Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☐ Yes ☒ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

MO 780-0000 (mm-yy) Page 1

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

Flooding & heavy rain.

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes)	End date	Time (to nearest 15 minutes)
4-30-11	3:00 ☐ a.m. ☒ p.m.	5-3-11	7:00 ☒ a.m. ☐ p.m.

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy): 7+ inches

Time period of rainfall: Hours Minutes

Amount of snow melt (estimated inches melted)

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	5-6-11

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	5-2-11	9:00 ☒ a.m. ☐ p.m.
COUNTY	**AUTHORIZED REPRESENTATIVE REPORTING**	**TELEPHONE NUMBER WITH AREA CODE**	**DNR OFFICE AND PERSON CONTACTED**
Miss	David Harris	573-238-5842	John Chamberlain

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
5-2-11	7:00 ☒ a.m. ☐ p.m.	5-4-11	7:00 ☐ a.m. ☒ p.m.

Estimated volume of wastewater discharged (gallons): 2000

Estimated rate of discharge in gallons per minute: 1

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 600 S. Thorn
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain	☐ Rain or Snow Melt	☐ Vandalism
☐ Power Outage	☐ Plugged Sewer	☐ Broken Sewer
☐ Equipment Failure	☒ Widespread Flooding	☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break	☐ Head Works	☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow	☐ Drying Beds	☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling	☐ Lift Station	☐ Aeration/Biological Treatment
☒ Manhole	☐ Clarifier/Filter/Batch Reactor	☐ Construction SSO
		☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil	☐ Discharge entering losing stream or sinkhole
☐ Ditch. Name of surface water it drains to:	☐ Nearby public drinking water intake
☒ Storm sewer. Name of surface water it drains to: Ditch 14	☐ Other, describe:
☐ Distance to stream if not yet reached (feet): ft.	Name of public drinking water intake:
☐ Surface water direct discharge (Name of stream):	Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:	☐ Nearby beach or other public area
☐ Fish kill or other impacted species	Name of beach or public area:
	Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☐ Yes ☒ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes)	End date	Time (to nearest 15 minutes)
4-30-11	3:00 ☐ a.m. ☒ p.m.	5-3-11	☒ a.m. ☐ p.m.

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy)	Amount of snow melt (estimated inches melted)
7+ inches	
Time period of rainfall: Hours Minutes	

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	5-6-11

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	5-2-11	9:00 ☒ a.m. ☐ p.m.
COUNTY	**AUTHORIZED REPRESENTATIVE REPORTING**	**TELEPHONE NUMBER WITH AREA CODE**	**DNR OFFICE AND PERSON CONTACTED**
Miss	David Harris	573-239-5842	John Chamista

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
5-2-11	7:00 ☒ a.m. ☐ p.m.	5-5-11	11:00 ☒ a.m. ☐ p.m.

Estimated volume of wastewater discharged (gallons)	Estimated rate of discharge in gallons per minute
1600	1

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS:
e. Physical Address: 305. E. Commercial
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain ☐ Rain or Snow Melt ☐ Vandalism
☐ Power Outage ☐ Plugged Sewer ☐ Broken Sewer
☐ Equipment Failure ☒ Widespread Flooding ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break ☐ Head Works ☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow ☐ Drying Beds ☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling ☐ Lift Station ☐ Aeration/Biological Treatment
☒ Manhole ☐ Clarifier/Filter/Batch Reactor ☐ Construction SSO
☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil
☐ Ditch. Name of surface water it drains to:
☒ Storm sewer. Name of surface water it drains to: 14
☐ Distance to stream if not yet reached (feet): ft.
☐ Surface water direct discharge (Name of stream):
☐ Discharge entering losing stream or sinkhole
☐ Nearby public drinking water intake
☐ Other, describe:
Name of public drinking water intake:
Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:
☐ Fish kill or other impacted species
☐ Nearby beach or other public area
Name of beach or public area:
Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☐ Yes ☒ No
Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):
See "Narrative Description" on back page to add additional details.

Clean up performed by

Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses Continued...

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. (Flooding) should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes)	End date	Time (to nearest 15 minutes)
4-30-11	3:00 ☐ a.m. ☒ p.m.	5-3-11	7:00 ☒ a.m. ☐ p.m.

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy)	Amount of snow melt (estimated inches melted)
7 + inches Time period of rainfall: Hours Minutes	

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	5-6-11

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Appendix 9.10: Self-Reporting Form for Wastewater SSOs/Bypasses

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
SELF-REPORTING FOR SANITARY SEWER OVERFLOWS OR WASTEWATER TREATMENT FACILITY BYPASSES

Notice: Under the Missouri Secretary of State's Code of State Regulations 10 CSR 20-7.015(9)(E), Effluent Regulations, Standard Conditions, Bypassing, and in accordance with reporting requirements listed in your Missouri State Operating Permit, or MSOP, all permittees shall provide the following notice(s) if an unscheduled Sanitary Sewer Overflow, or SSO, or Wastewater Treatment Facility Bypass occurs:

NOTIFICATION INFORMATION

PERMITTEE (MUNICIPALITY OR FACILITY NAME)	PERMIT NUMBER	DATE	TIME
Charleston	MO-0120081	5-2-11	9:00 ☒ a.m. ☐ p.m.
COUNTY	**AUTHORIZED REPRESENTATIVE REPORTING**	**TELEPHONE NUMBER WITH AREA CODE**	**DNR OFFICE AND PERSON CONTACTED**
Miss	David Harris	573-233-5842	John Chrometa

SANITARY SEWER OVERFLOW OR WASTEWATER TREATMENT FACILITY BYPASS DETAILS

☒ Overflow or ☐ Bypass ☒ Ongoing or ☐ Contained

Date discovered	Time (to nearest 15 minutes)	End Date	Time (to nearest 15 minutes)
5-2-11	7:00 ☒ a.m. ☐ p.m.	5-6-11	☐ a.m. ☐ p.m.

Estimated volume of wastewater discharged (gallons): 3000

Estimated rate of discharge in gallons per minute: /

Location of the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (complete a separate form for each discharge location and complete all that apply)

a. Street Location:
b. Manhole #:
c. Directions to the site from nearest highway:
d. Location defined by GPS: 561 E. Commercial St.
e. Physical Address:
f. Township/Range:

Circumstances Causing Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☒ Rain ☐ Rain or Snow Melt ☐ Vandalism
☐ Power Outage ☐ Plugged Sewer ☐ Broken Sewer
☐ Equipment Failure ☒ Widespread Flooding ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Type of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass (check all that apply):

☐ Pipe Break ☐ Head Works ☐ Effluent Weir/Flume
☐ Lagoon/Basin Overflow ☐ Drying Beds ☐ CSO Outfall (Dry Weather)
☐ Digester/ Solids handling ☐ Lift Station ☐ Aeration/Biological Treatment
☒ Manhole ☐ Clarifier/Filter/Batch Reactor ☐ Construction SSO
☐ Other (describe):

Strength of Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass: ☐ Raw ☐ Partially Treated ☒ Diluted

WATERCOURSE INFORMATION

Discharge Course

☐ Runs on ground and absorbs into the soil	☐ Discharge entering losing stream or sinkhole
☐ Ditch. Name of surface water it drains to:	☐ Nearby public drinking water intake
☒ Storm sewer. Name of surface water it drains to: 14	☐ Other, describe:
☐ Distance to stream if not yet reached (feet): ft.	Name of public drinking water intake:
☐ Surface water direct discharge (Name of stream):	Distance to public drinking water intake (feet): ft.

Impacts

Length of impact downstream:	☐ Nearby beach or other public area
☐ Fish kill or other impacted species	Name of beach or public area:
	Distance to a beach or public area (feet): ft.

RESPONSE/CLEANUP

Were samples taken? ☐ Yes ☒ No

Type of Samples Taken: ☐ BOD ☐ TSS ☐ E.Coli ☐ Fecal Coliform ☐ Ammonia ☐ Dissolved Oxygen ☐ None ☐ Other (describe):

Attach copies of any analytical results.

Any corrective action taken? ☐ Yes ☒ No

Clean up activity: ☒ Flushing ☐ Removing ☐ Chemical Application ☐ Damming ☐ Other (describe):

See "Narrative Description" on back page to add additional details.

Clean up performed by

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Attachment 5 Page 17 of 18

NARRATIVE DESCRIPTION

Provide a narrative description to further explain why the Sanitary Sewer Overflow or Wastewater Treatment Facility Bypass occurred. For example, describe what equipment failed, what caused the power outage, or what plugged the sewer. Flooding should only be indicated as a cause if there is significant flooding caused by high river, stream or lake water levels (not just localized high water in the street).

Because of the rain + flood we have sewer main cave in on the 500 block of E Commercial. We are bypassing to the next manhole. The main is about 10' deep we will repair as soon as possible.

WET WEATHER DATA (IF APPLICABLE)

DATE(S) AND DURATION(S) OF RAINFALL

Start date	Time (to nearest 15 minutes)	End date	Time (to nearest 15 minutes)
4-30-11	3:00 ☐ a.m. ☒ p.m.	5-3-11	7:00 ☒ a.m. ☐ p.m.

Amount of rainfall (nearest rain gauge to 0.1 inch accuracy): 7+ inches

Amount of snow melt (estimated inches melted):

Time period of rainfall: Hours Minutes

Contributing soil conditions (saturated, frozen, soil type)

ACTIONS TO CORRECT THIS OCCURRENCE AND PREVENT FUTURE OVERFLOWS OR BYPASSES

Describe what actions were taken to minimize the volume of wastewater discharged from the overflow or bypass reported on this form. Also describe what actions are planned to prevent or minimize future overflows or bypasses. The MSOP permit prohibits bypasses, unless certain specified conditions are met. If the permittee fails to operate and maintain the sewage collection system to prevent overflows and bypasses, they are subject to enforcement action.

REPORT COMPLETED BY

Authorized representative name (Please type or print)	Title
David Harris	Public Works Director
Authorized representative signature	**Date**
David Harris	5-6-11

MO 780-0000 (mm-yy) Page 2

		May, '14	June, '14	July, '14	Aug, '14	Sept, '14	Oct, '14	Nov, '14	Dec, '14	Jan, '15	Feb, '15	Mar, '15	Apr, '15	Total FY 2014-15 Budget
CCOUNT NUMBER	Wastewater Expenses													
	- Total Personnel Costs	25,127	18,043	18,043	18,043	18,043	25,062	18,108	19,253	18,293	18,293	31,793	18,293	246,394
3-3100-4000-100	- Insurance Costs	0	0	45,000	0	0	0	0	0	0	0	0	0	45,000
	- Supplies													
3-3100-3000-100	Fuel Costs (16.7%)	2,063	2,063	2,063	2,063	2,063	2,063	2,063	2,063	2,063	2,063	2,063	2,063	24,756
3-3100-4000-600	Office Supplies	100	100	100	100	100	100	100	100	100	100	100	100	1,200
3-3100-2000-110	Postage	450	450	450	450	450	450	450	450	450	450	450	450	5,400
3-3100-2000-400	Building Supplies	100	100	100	100	100	100	100	100	100	100	100	100	1,200
3-3100-2000-500	Clothing	160	160	160	160	160	160	160	160	160	160	160	160	1,920
3-3100-2000-700	Chemicals	25	25	25	25	25	25	25	25	25	25	25	25	300
3-3100-2000-600	Minor Tools	50	50	50	50	50	50	50	50	50	50	50	50	600
3-3100-3000-101	Misc Supplies	50	50	50	50	50	50	50	50	50	50	50	50	600
	Sub-Total	2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998	2,998	35,976
	- Maintenance													
3-3100-3000-200	Vehicle Maintenance	150	150	150	150	150	150	150	150	150	150	150	150	1,800
3-3100-3000-300	Building Maintenance	300	300	300	300	300	300	300	300	300	300	300	300	3,600
3-3100-3000-503	Equipment Leases/Maint.	800	800	800	800	800	800	800	800	800	800	800	800	9,600
3-3100-3000-500	Pump Maintenance	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
3-3100-3000-501	Instruments	35	35	35	35	35	35	35	35	35	35	35	35	420
3-3100-3000-507	UV Maintenance	200	200	200	200	200	0	0	0	0	0	0	0	1,000
3-3100-6000-500	Line Maintenance	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
3-3100-6000-501	Miscellaneous	100	100	100	100	100	100	100	100	100	100	100	100	1,200
	Sub-Total	5,585	5,585	5,585	5,585	5,585	5,385	5,385	5,385	5,385	5,385	5,385	5,385	65,620
	- Utilities													
3-3100-4000-300	Electricity	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	84,000
3-3100-4000-400	Telephone / Internet	100	100	100	100	100	100	100	100	100	100	100	100	1,200
	Sub-Total	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	7,100	85,200
	- Purchased Services													
3-3100-4000-200	Audit	0	0	0	0	0	0	0	2,000	0	0	0	0	2,000
3-3100-4000-205	Employee Drug Testing	50	0	0	50	0	0	50	0	0	50	0	0	200
3-3100-4000-907	MO One Call	30	30	30	30	30	30	30	30	30	30	30	30	360
3-3100-4000-704	Lab Services	775	775	775	775	775	775	775	775	775	775	775	775	9300
3-3100-4000-202	Professional Services	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000

Waste Water

3-3100-4000-911	DNR Fees	0	0	0	0	0	0	0	1,400	0	0	0	0	1,400
3-3100-6000-805	Miscellaneous	200	200	200	200	200	200	200	200	200	200	200	200	2400
	Sub-Total	**2,055**	**2,005**	**2,005**	**2,055**	**2,005**	**2,005**	**2,055**	**5,405**	**2,005**	**2,055**	**2,005**	**2,005**	**27,660**
														Total FY 2014-15
		May, '14	June, '14	July, '14	Aug, '14	Sept, '14	Oct, '14	Nov, '14	Dec, '14	Jan, '15	Feb, '15	Mar, '15	Apr, '15	Budget
CCOUNT NUMBER														
3-3100-4000-703	- Debt Service	6,900	52,946	6,900	6,900	6,900	6,900	6,900	186,642	6,900	6,900	6,900	6,900	308,588
3-3100-4000-910	- Auto Allowance	150	150	150	150	150	150	150	150	150	150	150	150	1,800
3-3100-1100-120	- Training / Dues	50	50	50	50	50	50	50	50	50	50	50	50	600
	Total WW Operating Expenses	**49,965**	**88,877**	**87,831**	**42,881**	**42,831**	**49,650**	**42,746**	**226,983**	**42,881**	**42,931**	**56,381**	**42,881**	**816,838**
	Capital Expenses													
3-3100-7000-100	New Storage Bldg (25%)	0	0	0	0	0	0	0	0	0	0	0	0	0
3-3100-7000-101	New Pick-Up Truck	0	0	0	0	0	0	0	0	0	0	0	0	0
3-3100-7000-102	Lift Station Renovations (2)	0	0	0	0	0	0	0	0	0	0	0	0	0
3-3100-7000-103	Sewer Line Testing	0	0	0	0	0	100,000	0	0	0	0	0	0	100,000
3-3100-7000-104	Lagoon Renovation	0	0	0	0	60,000	0	0	0	0	0	0	0	60,000
	Total Capital Expenses	**0**	**0**	**0**	**0**	**60,000**	**100,000**	**0**	**0**	**0**	**0**	**0**	**0**	**160,000**
	Total Wastewater Expenses	**49,965**	**88,877**	**87,831**	**42,881**	**102,831**	**149,650**	**42,746**	**226,983**	**42,881**	**42,931**	**56,381**	**42,881**	**976,838**
	TOTAL SYSTEM OPERATING EXP	**98,910**	**133,573**	**187,120**	**84,627**	**87,527**	**110,990**	**84,522**	**278,054**	**94,492**	**84,892**	**504,685**	**94,492**	**1,844,984**
	W / WW SYSTEM TOTAL EXP	**98,910**	**133,573**	**187,120**	**84,627**	**147,527**	**210,990**	**84,522**	**278,054**	**94,492**	**84,892**	**504,685**	**94,492**	**2,004,984**

City of Charleston, MO FY 2015- 2016 Water / WW System	May, '15	June, '15	July, '15	Aug, '15	Sept, '15	Oct, '15	Nov, '15	Dec, '15	Jan, '16	Feb, '16	Mar, '16	Apr, '16	Total FY 2015-16 Budget
REVENUES													
Water Revenues													
- Residential User Fees	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	412,800
- Metered User Fees	5,500	5,500	7,000	6,600	6,100	6,500	6,500	5,000	5,000	5,500	5,500	5,500	70,200
- Prison User Fees	15,000	15,000	20,000	25,000	20,000	20,000	18,000	17,000	15,000	15,000	15,000	15,000	210,000
- Sales / Use Tax	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	32,400
- Interest Income	300	300	300	300	300	300	300	300	300	300	300	300	3,600
- Water Deposits	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	24,000
- Penalty Income	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850	34,200
- Prison Connection Fee	0	0	140,000	0	0	0	0	0	0	0	0	0	140,000
- Rural Water Fees	5,000	6,000	7,500	9,300	8,000	6,400	5,900	5,000	5,000	5,000	5,000	5,000	73,100
- All Other Water Income	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
Sub-Total; Water Revenues	**68,750**	**69,750**	**217,750**	**84,150**	**77,350**	**76,150**	**73,650**	**70,250**	**68,250**	**68,750**	**68,750**	**68,750**	**1,012,300**
Wastewater Revenues													
- Residential User Fees	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,000	38,000	456,000
- Metered User Fees	6,000	7,000	7,000	6,000	6,000	6,500	6,500	7,000	7,000	7,000	7,000	7,000	80,000
- Prison User Fees	20,000	22,500	28,500	35,000	30,000	26,000	25,000	28,000	30,000	20,000	20,000	20,000	305,000
- All Other WW Income	50	50	50	50	50	50	50	50	50	50	50	50	600
Sub-Total; WW Revenues	**64,050**	**67,550**	**73,550**	**79,050**	**74,050**	**70,550**	**69,550**	**73,050**	**75,050**	**65,050**	**65,050**	**65,050**	**841,600**
Grant / Loan Proceeds	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL SYSTEM REVENUES	**132,800**	**137,300**	**291,300**	**163,200**	**151,400**	**146,700**	**143,200**	**143,300**	**143,300**	**133,800**	**133,800**	**133,800**	**1,853,900**

	May, '14	June, '14	July, '14	Aug, '14	Sept, '14	Oct, '14	Nov, '14	Dec, '14	Jan, '15	Feb, '15	Mar, '15	Apr, '15	FY 2015-16 Budget
Wastewater Expenses													
- Total Personnel Costs	27,265	19,428	19,428	19,428	19,428	27,200	19,493	20,773	19,645	19,645	32,245	19,645	263,618
- Insurance (31.5%)	0	0	51,975	0	0	0	0	0	0	0	0	0	51,975
- Supplies													
Fuel Costs (20.0%; 32.5%)	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	1,375	16,500
Office Supplies	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Postage	400	400	400	400	400	400	400	400	400	400	400	400	4,800
Building Supplies	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Clothing / Uniforms	225	225	225	225	225	225	225	225	225	225	225	225	2,700
Chemicals	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Minor Tools	50	50	50	50	50	50	50	50	50	50	50	50	600
Misc Supplies	50	50	50	50	50	50	50	50	50	50	50	50	600
Sub-Total	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**2,400**	**28,800**
- Maintenance													
Vehicle Maintenance	150	150	150	150	150	150	150	150	150	150	150	150	1,800
Building Maintenance	300	300	300	300	300	300	300	300	300	300	300	300	3,600
Equipment Leases / Maint.	1,806	500	750	1,806	500	750	1,806	500	750	1,806	500	750	12,224
Pump Maintenance	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
Lift Station Maintenance	0	0	7,000	0	45,000	0	0	0	0	0	0	0	52,000
Lagoon Maintenance	8,900	250	250	250	250	250	250	250	250	250	250	250	11,650
Instruments	35	35	35	35	35	35	35	35	35	35	35	35	420
UV Maintenance	200	200	200	200	200	0	0	0	0	0	0	0	1,000
Line Maint. / Testing	3,000	5,000	5,000	5,000	5,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	44,000
Miscellaneous	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Sub-Total	**17,491**	**9,535**	**16,785**	**10,841**	**54,535**	**7,585**	**8,641**	**7,335**	**7,585**	**8,641**	**7,335**	**7,585**	**163,894**
- Utilities													
Electricity	7,500	8,000	10,000	9,500	9,000	8,500	7,000	8,500	8,000	8,000	7,750	7,750	99,500
Telephone / Internet	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Sub-Total	**7,600**	**8,100**	**10,100**	**9,600**	**9,100**	**8,600**	**7,100**	**8,600**	**8,100**	**8,100**	**7,850**	**7,850**	**100,700**
- Purchased Services													
Audit	0	0	0	0	2,250	0	0	0	0	0	0	0	2,250
Employee Drug Testing	50	0	0	50	0	0	50	0	0	50	0	0	200
MO One Call	30	30	30	30	30	30	30	30	30	30	30	30	360
DNR Fees	0	0	0	0	0	0	1,600	0	0	0	0	0	1,600
Lab Services	750	750	750	750	750	750	750	750	750	750	750	750	9,000
Professional Services	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
Miscellaneous	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Sub-Total	**2,030**	**1,980**	**1,980**	**2,030**	**4,230**	**1,980**	**3,630**	**1,980**	**1,980**	**2,030**	**1,980**	**1,980**	**27,810**

	May, '15	June, '15	July, '15	Aug, '15	Sept, '15	Oct, '15	Nov, '15	Dec, '15	Jan, '16	Feb, '16	Mar, '16	Apr, '16	Total FY 2015-16 Budget
- Debt Service	7,416	48,500	7,416	7,416	7,416	7,416	191,000	7,416	0	0	0	0	283,996
- Auto Allowance	150	150	150	150	150	150	150	150	150	150	150	150	1,800
- Training / Dues	50	50	50	50	50	50	50	50	50	50	50	50	600
Total WW Operating Expenses	**64,402**	**90,143**	**110,284**	**51,915**	**97,309**	**55,381**	**232,464**	**48,704**	**39,910**	**41,016**	**52,010**	**39,660**	**923,193**
Capital Expenses													
De-Watering Pump	0	0	50,000	0	0	0	0	0	0	0	0	0	50,000
Total Capital Expenses	**0**	**0**	**50,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**50,000**
Total Wastewater Expenses	**64,402**	**90,143**	**160,284**	**51,915**	**97,309**	**55,381**	**232,464**	**48,704**	**39,910**	**41,016**	**52,010**	**39,660**	**973,193**
TOTAL SYSTEM OPERATING EXP	**118,047**	**131,495**	**231,338**	**99,868**	**142,416**	**116,247**	**277,807**	**92,222**	**92,006**	**87,761**	**106,299**	**91,006**	**1,587,613**
TOTAL CAPITAL EXPENSES	**0**	**0**	**77,500**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**77,500**
W / WW SYSTEM TOTAL EXP	**118,047**	**131,495**	**308,838**	**99,868**	**142,416**	**116,247**	**277,807**	**92,222**	**92,006**	**87,761**	**106,299**	**91,006**	**1,665,113**
Fund Excess (Deficit)	**14,753**	**5,805**	**-17,538**	**63,332**	**8,984**	**30,453**	**-134,607**	**51,078**	**51,294**	**46,039**	**27,501**	**42,794**	**188,787**

TABLE 1.5 – PROJECTED POPULATION

	City of Charleston		Mississippi County	
Year	Population	Percent Change	Population	Percent Change
1990	5,085	N/A	14,442	N/A
2000	4,732	-6.94	13,427	-7.03
2007	5,190	+9.67	13,494*	+0.5
2008	5,692*	+9.67	13,504	+0.07

* Estimated Population

Source: U.S. Department of Commerce, Bureau of Census.

According to the 2000 U.S. Census, the median household income for the City was $21,812, and the median family income was $28,178. Males had a median income of $25,908 versus $17,292 for females. The per capita income for the City was $12,876. Approximately 21.2% of families and 26.0% of individuals in the population were below the poverty line.

2. DESCRIPTION OF EXISTING WASTEWATER TREATMENT SYSTEM

A schematic of the City of Charleston Wastewater Treatment Plant (WWTP), labeled Figure 3 can be found at the end of this report. It shows the wastewater's flow path as it travels through the facility to the discharge point at the unnamed tributary.

The City's existing Missouri State Operating Permit, MO-0120081, for the design flow of 1.5 million gallons per day (MGD), was issued on January 23, 2009 and will expire on January 22, 2014. The operating permit lists the facility as having three (3) aerated lagoon cells and one (1) sludge retention cell that utilizes a weir structure to retain the sludge. This system is designed for a population equivalent of 15,000 and a sludge production of 225 dry tons per year.

The City's permit outlines two separate sets of ammonia effluent discharge parameters, one during and one outside the months between November and April, which the City must meet. The existing permit requires that the facility monitor its ammonia levels, temperature, and influent flow. It addition, the system must maintain a monthly average of 10 mg/L for oil and grease and pH reading between 6 and 9 standard units.

In accordance with the City's Water Quality Review Sheet (WQRS) limitations, the biological oxygen demand (BOD) requirements are 65 milligrams per liter (mg/L) for a weekly average and 45 mg/L for a monthly average. The Total Suspended Solids (TSS) are limited to 110 mg/L for a weekly average and 70 mg/L for the monthly average. The WQRS limitations on ammonia require a monthly average of less than 1.4 mg/L between the months of May and October and less than 2.9 mg/L between the months of November and April of each year.

The existing wastewater treatment facility was originally designed with a pump station, three lagoon cells, and discharge piping into an unnamed stream that flows into Stevenson Bayou. The wastewater facility has since been improved with the addition of a fourth lagoon cell. This additional cell is an aerated lagoon that serves as the existing primary aerated cell for the facility. The previous primary aerated cell is still in use at the facility. It now serves as a secondary

aerated cell. The 16" force main that feeds the facility is plumbed into both the primary and secondary cell. This serves to help prevent any downtime or bypass to the facility when maintenance or repairs are necessary. The following paragraphs describe the existing treatment process.

2.1. Primary Cell (Cell #1)

The wastewater treatment system's primary cell has a rectangular shape, with an approximate surface area of 295,800 square feet and has side slopes at a 3:1 ratio. The maximum design volume is approximately 26.5 million gallons. With the system's current permitted design flow of 1.5 million gallons per day, the design detention time for the primary lagoon cell is approximately 17.67 days. The detention time in the primary cell accounts for approximately 53% of the system's total detention time. The primary cell is where the system's overall treatment for BOD and TSS reduction takes place. The primary cell is served by its own aeration system. This blower building is located on the northern levee between the primary cell and the secondary aeration cell. The flow of wastewater that runs through the primary treatment cell begins by entering at the southeastern corner of the cell and ends by leaving at its northeastern corner. The following paragraph describes the outlet structure situated at the primary cell's northeastern corner; it is referred to as Transfer Structure #1.

2.2. Transfer Structure #1

Wastewater from the primary cell is transferred to the secondary aeration cell by 700' of 18" HDPE pipe. Transfer Structure #1 draws wastewater out of the primary cell and transports it to the original inlet structure to the secondary aeration cell. The secondary aeration cell inlet pipes are equipped with fittings that allow their openings to be oriented downward toward the lagoon bottom. The purpose of having a downward orientation is to prevent any solids on the lagoon's surface from entering the pipes and possibly wreaking havoc on their ability to transfer flow. Transfer structure #1 transfers the wastewater from the primary cell to the next step in the wastewater treatment process, the *Secondary Aeration Cell.*

2.3. Secondary Aeration Cell (Cell #2)

The secondary aeration cell represents the next stage in the wastewater treatment process. It provides the second stage in the three stage system to assist in reducing the Ammonia, BOD and TSS in the wastewater. Wastewater enters the cell at its eastern lagoon levee through the transfer structure described above. The secondary cell was originally designed to be the facilities primary treatment cell. The secondary aeration cell has a surface area of approximately 175,500 square feet. The wastewater treatment system's secondary cell has a rectangular shape with sides that have a 3:1 slope ratio. The secondary cell has a maximum design volume of approximately 10.21 million gallons. With the system's current permitted design flow of 1.5 million gallons per day, the detention time for the secondary aeration cell approximately 6.8 days. The secondary aeration cell has a design detention time that accounts for approximately 20.4% of the total detention time for the system. The flow of wastewater that runs through the secondary aeration cell ends by leaving at its western levee. The following paragraph describes the outlet structure situated at the secondary cell's western levee that transfers treated wastewater to the system's *Additional Secondary Aeration Cell*; it is referred to as Transfer Structure #2.

2.4. Transfer Structure #2

Wastewater from the secondary aeration cell is transferred to the additional secondary aeration cell by 255' of pipe. Transfer Structure #2 draws wastewater out of the cell #2 and transports it

to cell #3. The inlet pipes to cell #3 are also equipped with fittings that allow their openings to be oriented downward toward the lagoon bottom. Transfer structure #2 transfers the wastewater from the secondary aeration cell to the next step in the wastewater treatment process, the *Additional Secondary Aeration Cell.*

2.5. Additional Secondary Aeration Cell (Cell #3)

The Additional Secondary Aeration Cell represents the next stage in the wastewater treatment process. It provides the third stage in the three stage system to assist in reducing the Ammonia, BOD and TSS in the wastewater. Wastewater enters the cell at its northern lagoon levee through the transfer structure described above. Cell #3 was originally designed to be the facility's secondary treatment cell. The additional secondary aeration cell has a surface area of approximately 162,000 square feet. The wastewater treatment system's additional secondary cell has a square shape with sides that have a 3:1 slope ratio. The additional secondary cell has a maximum design volume of approximately 9.26 million gallons. With the system's current permitted design flow of 1.5 million gallons per day, the detention time for the secondary aeration cell approximately 6.17 days. The additional secondary aeration cell has a design detention time that accounts for approximately 18.5% of the total detention time for the system. The flow of wastewater that runs through the additional secondary aeration cell ends by leaving at its eastern levee. The following paragraph describes the outlet structure situated at the additional secondary cell's eastern levee that transfers treated wastewater to the system's *Polishing Cell*; it is referred to as Transfer Structure #3.

2.6. Transfer Structure #3

Wastewater from the secondary aeration cell is transferred to the additional secondary aeration cell by 140' of pipe. Transfer Structure #3 draws wastewater out of the cell #3 and transports it to the polishing cell. The inlet pipes to cell #3 are also equipped with fittings that allow their openings to be oriented downward toward the lagoon bottom. Transfer structure #3 transfers the wastewater from the additional secondary aeration cell to the next step in the wastewater treatment process, the *Polishing Cell.*

2.7. Polishing Cell (Cell #4)

The polishing cell represents the final stage in the wastewater treatment process. Wastewater enters the cell at its southwestern corner through the transfer structure described above. The polishing cell was designed to be the facilities final treatment cell. The polishing cell, or facultative stabilization pond, serves as the final clarifier for the treatment facility. The biological solids sink to the bottom and the effluent waste water from this cell is released through a weir structure. This weir structure is known as the Discharge Structure. The polishing cell has a surface area of approximately 86,500 square feet. The wastewater treatment system's polishing cell has a semi-rectangular shape with sides that have a 3:1 slope ratio. The polishing cell has a maximum design volume of approximately 4.10 million gallons. With the system's current permitted design flow of 1.5 million gallons per day, the detention time for the polishing cell approximately 2.7 days. The polishing cell has a design detention time that accounts for approximately 8.1% of the total detention time for the system. The total design detention time for entire facility is approximately 33.34 days.

2.8. Outfall Stream

The outfall stream for the City of Charleston wastewater treatment plant is an Unnamed Tributary that leads to Stevenson Bayou. The treated effluent leaves the plant through Outfall

#001 which is clearly marked on-site. The location of the outfall is NW ¼ SE ¼, Section 33, Township 27 North, and Range 16 East in Mississippi County, Missouri. The nearest downstream water body to Stevenson Bayou is Fish Lake Ditch. In the following sections of this report the problems facing the wastewater plant will be discussed.

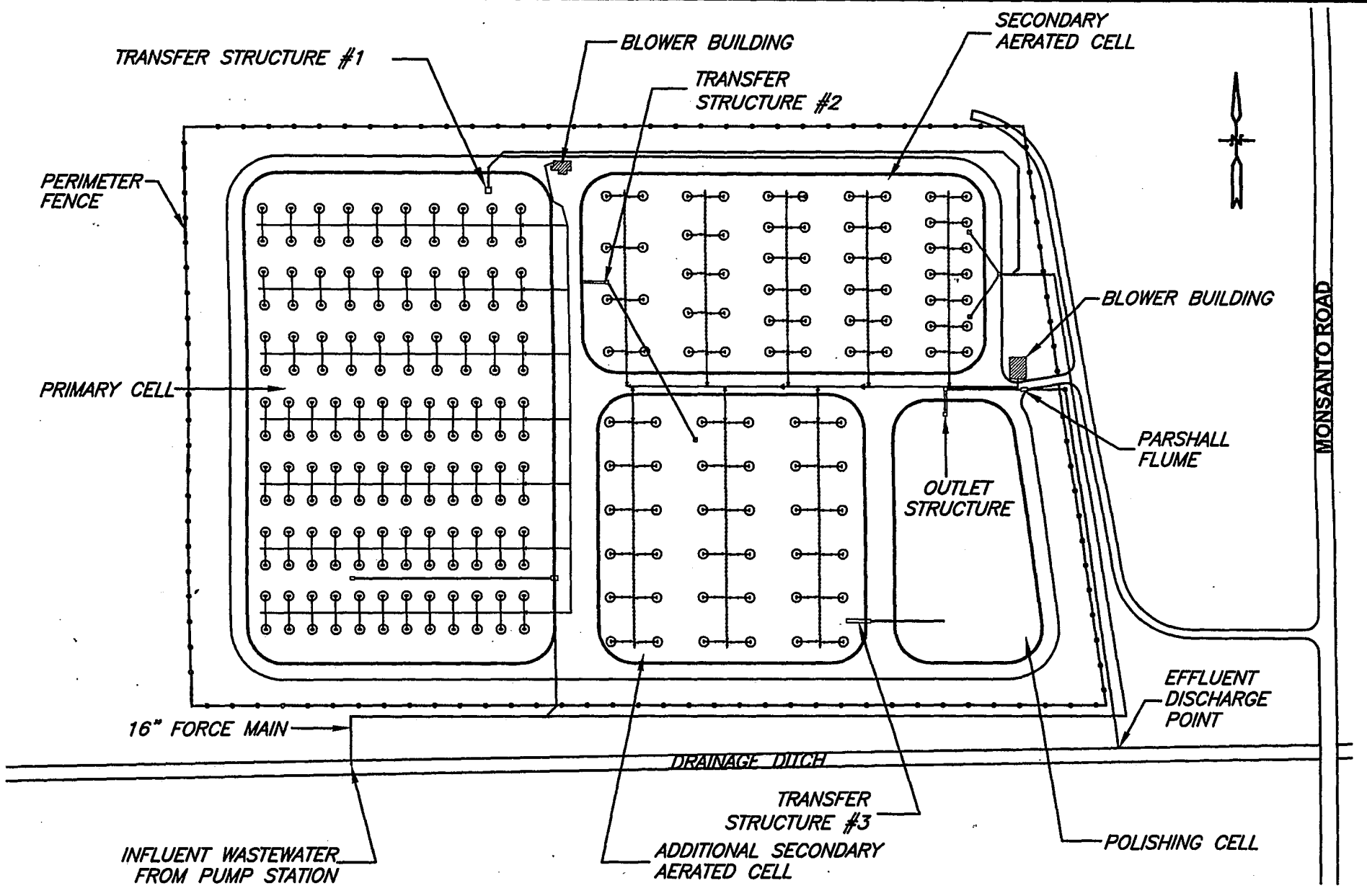
3. DESCRIPTION OF PROBLEM

3.1. Ammonia Effluent Levels

Among the problems currently faced by the City of Charleston wastewater treatment plant is the fact that the system has been out of effluent compliance. The parameters that the plant has failed to meet on a consistent basis are those related to the level of Ammonia in the plant's effluent which is discharged into Stevenson Bayou. According to the testing documentation, during the 14 month period between December, 2007 and January, 2009, the WWTP was above maximum allowable ammonia level for 8 months, 57% of the time. The City's yearly average ammonia discharge level is 4.54 mg/L. The City's permit currently allows for a discharge ammonia level of 3.1 mg/L from Nov 1st through April 30th and 1.5 mg/L from May 1st through September 31st. Many lagoon-based systems provide adequate ammonia removal during the summer months when the surrounding climate is hot and humid. However, during the winter months, when the weather is cold and dry, the biological nitrification process is slowed. This results in compliance issues of ammonia removal for the WWTP. The Measured Effluent Ammonia vs. WQRS Limits chart in appendix C shows the measured effluent ammonia levels for the WWTP. During the months of December through March/April, the ammonia levels are far out of compliance with MDNR limitations. In contrast, during the months of May through September/October the effluent ammonia levels are well below the required limits. Consideration must be given to alternative design processes that will be capable of meeting these effluent limitations. According to the treatment plant's last operating permit issued January 23, 2009 and expires January 22, 2014, the maximum permitted BOD levels, were 65 mg/L as a weekly average and 45 mg/L as a monthly average. There was no daily maximum on the permit but the effluent BOD reading cannot be very much higher than the weekly average. The observed maximum level during the December, 2007 to January, 2009 time period for BOD was 47.5 mg/L and 172 mg/L for TSS during the month of March, 2008. This indicates that the system was possibly overloaded during the month, excessive rainfall during the month, or possibly an error occurred in the process of catching the sample. It is desirable to have a low ammonia concentration in a final effluent because it is toxic to fish and other aquatic life. The Ammonia that is being released into Stevenson Bayou is harmful, not only the immediate discharge area, but also to the area downstream of the WWTP. Unsuspecting children that decide to play near Stevenson Bayou downstream of the WWTP are in danger due to the condition of the existing treatment system. It's imperative that the City of Charleston take action to comply with MDNR permitting requirements. The existing wastewater treatment facility is out of compliance with its current permit and the limits outlined in the latest Stevenson Bayou Water Quality Review Sheet (WQRS). To avoid the possibility of fines, the system must be upgraded. Appendix C, Measured Effluent Linear Charts, located at the end of this report; show that the system is operating out of compliance.

3.2. Inflow & Infiltration

Near record breaking rainfall in southeast Missouri can be attributed to the spike in the readings for the Measured Effluent Linear Charts located in appendix C. Cape Girardeau, MO, approximately 30 miles away, received 30.62" of seasonal rainfall. This was recorded as the 2nd



REVIEW COPY: August 4, 2009

NOT FOR CONSTRUCTION

P:\Eng\P090092 Charleston WW PER\Drawings\P090092.dwg

8/4/2009 9:43 AM

SHEET: FIG. 3

CHARLESTON WASTEWATER PER
CHARLESTON, MISSOURI

WASTEWATER TREATMENT PLANT SCHEMATIC

DESIGNED BY: JNR DATE: 4/09
DRAWN BY: RDS DATE: 4/09
CHECKED BY: RGW DATE: 4/09
DRAWING FILE: P090092.dwg
0 100 200
JOB: P090092
THIS BAR WILL MEASURE 1" WHEN PRINTED AT FULL SCALE.

SMITH & CO. ENGINEERS
EMPLOYEE OWNED
901 VINE STREET; P.O. BOX 72
POPLAR BLUFF, MISSOURI 63902
(573) 785-9621 FAX: (573) 785-2651 WWW.SHSMITHCO.COM

ATTACHMENT 8

Notice of Potential National Pollution Discharge Elimination System (NPDES) PERMIT VIOLATIONS

Permittee (facility) Name and Address:

City of Charleston
PO Box 216 Charleston, MO 63834

NPDES Permit Number: MO-0120081

During the Clean Water Act § 308 compliance inspection conducted on Mar 3-4, 2015 **the potential NPDES permit violations noted below were found. Additional violations may be brought to your attention following a complete review of the inspection report and other available information.**

POTENTIAL NPDES PERMIT VIOLATIONS

Charleston WWTF exceeded permit limits for ammonia in December 2014 (average 3.29 mg/L; maximum 6.21 mg/L) and January 2015 (10.5/11.8 mg/L). Seasonal limits are avg. 2.9 mg/L; max 9.3 mg/L.

REQUESTED ACTION: Within ten (10) days, please describe in writing any actions taken, or planned, to correct the potential violations identified above. Your response will be considered in the determination of the need for further administrative or legal action. Mail your description of corrective actions to your inspector at:

U.S. Environmental Protection Agency
ENSV/EMWC
901 North 5th Street
Kansas City, Kansas 66101-2907

Inspector's printed name: Peter M Green

Inspector's signature: Peter M Green

Notice received by: *(name & title)* David Hanni Public Works Dir

Date: 03/04/2015

ATTACHMENT 9

Green, Pete

From: David Harris <david@charlestonmo.us>
Sent: Monday, March 09, 2015 10:05 AM
To: Green, Pete
Subject: Corrective action

Pete,

In 2012 the City spent 1.3 million dollars on a nitrification reactor at our lagoon, August 1, 2012 it went on line. Since then we had 3 incidents of over our limits of NH3 (April & May of 2013 ,February 2014, & December 2014 January 2015).The reactor works well as long as the water temperature is above 6°C keeping our levels <.05. We have discussed our possible options with our engineer to how to solve this problem and we are waiting on DNR to give us our new permit before we invest in other treatment options.

Thanks,

David Harris
Public Works Director
City of Charleston, Mo.
PH 573.683.3325
FX 573.683.3297
Cell 573.233.5842

ATTACHMENT 10

United States Environmental Protection Agency
Washington, D. C. 20460

Water Compliance Inspection Report

Form approved.
OBM No. 2040-0057
Approval Expires 8-31-98

Section A: National Data System Coding (i.e., CS)

1	2	3	11	12	17	18	19	20
Inspection Code		NPDES		YY/MM/DD		Inspection type	Inspector	Face Type
N		MO Ø 0 2 0 Ø 8 1		1 5 0 3 0 4		S	R	1

Remarks

21 ____ 66

67	69	70	71	72	73	74	75	80
Inspection Work Days		Facility Self-Monitoring Evaluation Rating	B1	QA	Reserved			
			N					

Section B: Facility Data

Name and location of Facility Inspected *(For Industrial users discharging to POTW, also provide POTW Name and NPDES permit number)*

Charleston Wastewater Treatment Lagoon
County Rd 215 (Monsanto Road) Charleston, MO 63834

Entry Time/date: 13:00 3/3/15

Exit Time/ date: 10:00 3/4/15

Permit effective Date: 01/23/2009

Permit expiration Date: 01/22/2014

Person(s) On-site Representative(s)/ Title(s)/phones and Fax Number(s)

David Harris, Public Works Director

Other Facility dates

Name address of Responsible official/ title/Phone/Fax Number

Richard Goode, City Manager

Contacted ☐ yes ☐ No

Section C: Areas Evaluated during Inspection (*Check only those areas evaluated*)

✓ Permit	✓ Flow Measurement	✓ Operations & Maintenance	✓ CSO/SSO (Sewer overflow)
✓ Records/ Reports	✓ Self-Monitoring Program	Sludge Handling/Disposal	Pollution Prevention
✓ Facility site Review	Compliance Schedules	Pretreatment	Multimedia
✓ Effluent/Receiving Waters	Laboratory	Storm Water	Other

Section D: Summary of Findings/ Comments (Attach additional sheets of narrative and checklists as necessary)

Name(s) and signature(s) of Inspector(s)	Agency/ Office/ Phone and Fax Numbers	Date
Peter Green Peter M Green	913-551-7343 fax x 9343	03/04/15
Signature of Management QA Reviewer	Agency/ Office/ Phone and Fax Numbers	Date

EPA form 3560-3(rev 5-08) Previous editions are obsolete

Section F thru L: Complete on all in sections, as appropriate. N/A = Not Applicable	Permit No. MO-0120081
Section F: Facility and Permit Background	
ADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY *(Including City, County and ZIP code)* City of Charleston 204 N Main Charleston, MO 63834	DATE OF LAST PREVIOUS INVISTIGATION BY EPA/STATE: 06/12/2013 MDNR FINDINGS: Lift stations: valves need to be exercised periodically

Section G: Records and Reports	
RECORDS AND REPORTS MAINTAINED AS REQUIREDBY PERMIT. ☑ YES ☐ NO ☐ N/A (further explanation attached_____)	
(a) ADEQUET RECORDS MAINTAINED OF:	
(i) SAMPLING DATE, TIME, EXACT LOCATION	☑ YES ☐ NO ☐ N/A
(ii) ANALYSIS DATE, TIME	☑ YES ☐ NO ☐ N/A
(iii) INDIVIDUAL PERFORMING ANALYSIS	☑ YES ☐ NO ☐ N/A
(iv) ANALYTICAL METHODS/TECHNIQUES USED	☑ YES ☐ NO ☐ N/A
(v) ANALYTICAL RESULTS *(e.g., consistent with self monitoring report data)*	☑ YES ☐ NO ☐ N/A
(b) MONITORING RECORDS *(e.g. flow, pH, DO, etc)* MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGNAL STRIP CHART RECORDINGS *(e.g. continuous monitoring instrumentation, calibration and maintenance records).*	☑ YES ☐ NO ☐ N/A
(c) LABEQUIPMENT CALIBRATION AND MAINTENANCE REDORDS KEPT (pH, DO)	☑ YES ☐ NO ☐ N/A
(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT	☑ YES ☐ NO ☐ N/A
(e) QUALITY ASSURANCE RECORDS KEPT	☐ YES ☐ NO ☑ N/A
(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES *(and their compliance status) USING PUBLICALLY OWEND TREATMENT WORKS*	☐ YES ☐ NO ☑ N/A
Section H: Permit Verification	
INSPECTION OBSERVATION VERIFY THE PERMIT ☑ YES ☐ NO ☐ N/A (further explanation attached_____)	
(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE	☑ YES ☐ NO ☐ N/A
(b) FACILITY IS AS DESCRIBED IN PERMIT Added ammonia reactor in 08/2012	☐ YES ☑ NO ☐ N/A
(c) PRINCIPAL PRODUCT(C) AND PRODUCTION RATE CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION	☐ YES ☐ NO ☑ N/A
(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION	☑ YES ☐ NO ☐ N/A
(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES	☐ YES ☐ NO ☑ N/A
(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED	☑ YES ☐ NO ☐ N/A
(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT	☑ YES ☐ NO ☐ N/A
(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS	☑ YES ☐ NO ☐ N/A
(I) ALL DISCHARGES ARE PERMITTED	☑ YES ☐ NO ☐ N/A
Section I: Operation and Maintenance	
(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.	☐ YES ☑ NO ☐ N/A
(b) ADEQUATE ALARM SYSTEM FOR POWER EQUIPMENT FAILURES AVAILABLE	☑ YES ☐ NO ☐ N/A
(c) REPORTS ON ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.	☐ YES ☐ NO ☑ N/A
(d) SLUDGE AND SOLIDS ADEQUATELY DISPOSED	☐ YES ☐ NO ☑ N/A
(e) ALL TREATMENT UNITS IN SERVICE	☑ YES ☐ NO ☐ N/A
(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.	☑ YES ☐ NO ☐ N/A
(g) QUALIFIED OPERATING STAFF PROVIDED	☑ YES ☐ NO ☐ N/A
(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS	☑ YES ☐ NO ☐ N/A
(I) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS	☑ YES ☐ NO ☐ N/A
(j) INSTRUCTION FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT	☑ YES ☐ NO ☐ N/A
(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.	☑ YES ☐ NO ☐ N/A
(l) SPCC PLAN AVAILABLE	☐ YES ☐ NO ☑ N/A

Permit No. MO-0120081

Section J : Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEDULE ☐ YES ☐ NO ☑ N/A *(Further explanation attached_____)*

CHECK APPROPRIATE PHASE(S)

(A)☐ THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.

(B)☐ PROPER AGREEMENT HAS BEEN MADE FOR FINANCING *(mortgagee commitments, grants, etc.)*

(C)☐ CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.

(D)☐ DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.

(E)☐ CONSTRUCTION HAS COMMENCED.

(F)☐ CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.

(G)☐ CONSTRUCTION HAS BEEN COMPLETED

(H)☐ START UP HAS COMMENCED.

(I)☐ THE PERMITTEE HAS REQUESTED AND EXTENSION OF TIME.

Section K: Self Monitoring Program

Part 1 – Flow measurement *(further explanation attached_____)*

PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. ☑ YES ☐ NO ☐ N/A

Details:

(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.	☐ YES ☐ NO ☐ N/A
TYPE OF DEVICE: ☑ WEIR ☐ PARSHALL FLUME ☐ MAGMETER ☐ VENTURI METER ☐ OTHER *(specify_____)*	
(b) CALIBRATION FREQUENCY ADEQUATE. *(date of last calibration_____)*	☑ YES ☐ NO ☐ N/A
(c) primary FLOW measuring device properly OPERATED AND MAINTAINED	☑ YES ☐ NO ☐ N/A
(d) SECONDARY INSTRUMENTS *(totalizers, recorders, etc.)* PROPERLY OPERATED AND MAINTAINED	☑ YES ☐ NO ☐ N/A
(e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES.	☑ YES ☐ NO ☐ N/A

Part 2 – Sampling *(further explanation attached_____)*

PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT. ☑ YES ☐ NO ☐ N/A

Details:

(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.	☑ YES ☐ NO ☐ N/A
(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT.	☑ YES ☐ NO ☐ N/A
(c) PERMITTEE IS USING METHODS OF SAMPLING AGREE WITH PERMIT	☑ YES ☐ NO ☐ N/A
IF NO: ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE *(FREQUENCY_____)*	
(d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE.	☑ YES ☐ NO ☐ N/A
(I) SAMPLES REFRIGERATED DURING COMPOSITION	☐ YES ☐ NO ☑ N/A
(II) PROPER PRESERVATION TECHNIQUES USED	☑ YES ☐ NO ☐ N/A
(III) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT	☐ YES ☐ NO ☑ N/A
(IV) SAMPLES HOLDING TIMES PRIOR TO ANALYSIS IN CONFORMANCE WITH 40 CFR 136.3	☑ YES ☐ NO ☐ N/A
(e) MONITORING AND ANALYSIS BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT	☐ YES ☑ NO ☐ N/A
(f) IF (e) IS YES, RESULTS ARE REPOTED IN PERMITTE'S SELF MONITORING REPORT.	☐ YES ☐ NO ☑ N/A

Part 3 – Laboratory *(further explanation attached_____)*

PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT. ☑ YES ☐ NO ☐ N/A

Details:

(a) EPA approved analytical testing procedures used. *(40CFR 136.3)*	☑ YES ☐ NO ☐ N/A
(B) IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED. PROPER APPROVAL HAS BEEN OBTAINED.	☐ YES ☐ NO ☑ N/A
(C) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED	☐ YES ☑ NO ☐ N/A
(D) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.	☐ YES ☐ NO ☑ N/A
(E) QUALITY CONTROL PROCEDURES USED.	☐ YES ☐ NO ☑ N/A
(F) DUPLICATE SAMPLES ARE ANALYZED. _____% OF TIME. (Contract Lab used)	☐ YES ☐ NO ☑ N/A
(G) SPIKED SAMPLES ARE USED. _____% OF TIME.	☐ YES ☐ NO ☑ N/A
(H) COMMERCIAL LABORATORY USED.	☑ YES ☐ NO ☐ N/A
(I) COMMERCIAL LABORATORY STATE CERTIFIED.	☑ YES ☐ NO ☐ N/A

LAB NAME Environmental Analysis South

LAB ADDRESS Jackson, MO

Permit No. MO 0120081

Section L : Effluent/ Receiving Water Observation *(Further explanation attached_____)*

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	VISIBLE FLOAT SOL	COLOR	OTHER
Influent	None	None	moderate	None	None	lt. brn.	
Outfall 001	None	None	v. slight	None	None	clear greenish	

(Section M and N Complete as Appropriate for Sampling Inspections)

Section M: Sampling Inspection Procedures and Observations *(further explanation attached_____)*

(a)☑ GRAB SAMPLES OBTAINED

(b)☑ COMPOSITE OBTAINED

(c)☐ FLOW PROPORTIONED SAMPLE

(d)☑ AUTOMATIC SAMPLER USED – Influent

(e)☐ SAMPLE SPLIT WITH PERMITTEE

(f)☑ CHAIN OF CUSTODY EMPLOYED

(g)☐ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

COMPOSITING FREQUENCY 30 min x 100 mL PRESERVATION H_2SO_4 for NH_3, HCl for FOG. (iced)

SAMPLE REFRIGERATED DURING COMPOSITING: ☑ YES ☐ NO ☐ N/A

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE Yes

Section N: Collection System and Sanitary Sewer Overflow (SSOs)

Who is responsible for the collection system (name and phone number)? David Harris, PW Director

Who answered the following Questions: David Harris

What is your typical capital improvement budget for the collection system? $ wastewater operating budget ~ $950K-$975K

How many miles of sanitary sewer lines are in the collection system? 35 miles

How many miles of sanitary sewer lines are cleaned in a typical year? _____ miles

What is the average age of the sanitary sewer lines? _____ years some date to ~1900

Any Hydraulic and/or organic overloads experienced. ☐ YES ☑ NO

ANY BYPASSING SINCE LAST INSPECTION. ☐ YES ☑ NO

How do you document responses to complaints for sewer back-ups, sewage leaks, overflows, etc.?

See Attachment 4.

How many basement back-up complaints do you respond to in a year? Very few basements here (shallow water table)

Do you have any discharges (SSOs) from the collection system? : ☐ YES ☑ NO Not since 2011 Flood.

Do you report discharges (SSOs) to regulatory agency? : ☑ YES ☐ NO ☐ Copies

Describe the types of discharge:

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0120081
Owner:	City of Charleston
Address:	P.O. Box 216, Charleston, MO 63834
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Charleston Wastewater Treatment Lagoon
Facility Address:	County Road 215, Charleston, MO 63834
Legal Description:	NW ¼, SE ¼, Sec. 33, T27N, R16E, Mississippi County
Latitude/Longitude:	+3656265/-08919361
Receiving Stream:	Unnamed tributary to Stevenson Bayou (U)
First Classified Stream and ID:	Stevenson Bayou (C) (03135)
USGS Basin & Sub-watershed No.:	(08020201 – 010001)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 - POTW - SIC #4952 - **Certified "C" Operator Required**
Three (3) cell aerated lagoon/ one (1) cell lagoon/ Weir structure/ sludge is retained in lagoon.
Design population equivalent is 15,000.
Design flow is 1.5 MGD.
Actual flow is 0.9 MGD.
Design sludge production is 225 dry tons/year.
Actual sludge production is 174 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

January 23, 2009 — Effective Date
February 6, 2009 — Revised Date

Joseph P. Bindbeutel, Acting Director, Department of Natural Resources

January 22, 2014 — Expiration Date

Robert K. Morrison, P.E., Chief, Water Pollution Control Branch

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 2 of 12
	PERMIT NUMBER MO-0120081

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until three (3) years after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	Once/week	24 hr. total
Biochemical Oxygen Demand$_5$**	mg/L		65	45	Once/week	grab
Total Suspended Solids**	mg/L		110	70	Once/week	grab
pH – Units	SU	***		***	Once/week	grab
Temperature	°C	*		*	Once/week	grab
Ammonia as N	mg/L					
(May 1 – Oct 31)		*		*	Once/week	grab
(Nov 1 – April 30)		*		*	Once/week	grab
Oil & Grease	mg/L	*		*	Once/month	grab
Antimony, Total Recoverable	µg/L	*		*	Once/month	grab
Copper, Total Recoverable	µg/L	*		*	Once/month	grab
Lead, Total Recoverable	µg/L	*		*	Once/month	grab
Zinc, Total Recoverable	µg/L	*		*	Once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2009. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 3 of 12 PERMIT NUMBER MO-0120081

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until three (3) years after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Cyanide, Amenable to Chlorination	µg/L	*		*	Once/quarter****	grab
Arsenic, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Beryllium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Chromium (III), Total Recoverable	µg/L	*		*	Once/quarter****	grab
Chromium (VI), Total Recoverable	µg/L	*		*	Once/quarter****	grab
Iron, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Mercury, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Nickel, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Selenium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Silver, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Thallium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2009. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #10			Once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2009.						
Total Toxic Organics (Note 1)	µg/L	*		*	Once/permit cycle	grab
MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE February 28, 2010.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS	PAGE NUMBER 4 of 12
	PERMIT NUMBER MO-0120081

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective three (3) years from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	Once/week	24 hr. total
Biochemical Oxygen Demand$_5$**	mg/L		65	45	Once/week	grab
Total Suspended Solids**	mg/L		110	70	Once/week	grab
pH – Units	SU	***		***	Once/week	grab
Temperature	°C	*		*	Once/week	grab
Ammonia as N	mg/L					
(May 1 – Oct 31)		6.6		1.4	Once/week	grab
(Nov 1 – April 30)		9.3		2.9	Once/week	grab
Oil & Grease	mg/L	15		10	Once/month	grab
Antimony, Total Recoverable	mg/L	7.0		3.5	Once/month	grab
Copper, Total Recoverable	µg/L	19		9.5	Once/month	grab
Lead, Total Recoverable	µg/L	9.3		4.7	Once/month	grab
Zinc, Total Recoverable	µg/L	180		89.6	Once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective three (3) years from the effective date of this permit and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Cyanide, Amenable to Chlorination	µg/L	*		*	Once/quarter****	grab
Arsenic, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Beryllium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Chromium (III), Total Recoverable	µg/L	*		*	Once/quarter****	grab
Chromium (VI), Total Recoverable	µg/L	*		*	Once/quarter****	grab
Iron, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Mercury, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Nickel, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Selenium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Silver, Total Recoverable	µg/L	*		*	Once/quarter****	grab
Thallium, Total Recoverable	µg/L	*		*	Once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE April 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #10			Once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE October 28, 2012 .						
Total Toxic Organics (Note 1)	µg/L	*		*	Once/permit cycle	grab
MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE February 28, 2010.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I, II, & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** This facility is required to meet a removal efficiency, please see Part C – Influent Monitoring Requirements.

*** pH is measured in pH units and is not to be averaged. The pH is to be maintained at or above 6.0 pH units.

**** See table below for quarterly sampling:

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 1 - Total Toxic Organics:

Acenaphthene
Acrolein
Acrylonitrile
Benzene
Benzidine
Carbon Tetrachloride (tetrachloromethane)
Chlorobenzene
1,2,4-trichlorobenzene
Hexachlorobenzene
1,2-dichloroethane
1,1,1-trichloroethane
Hexachloroethane
1,1-dichloroethane
1,1,2-trichloroethane
1,1,2,2-tetrachloroethane
Chloroethane
Bis (2-chloroethyl) ether
2-chloroethyl vinyl ether
N-nitrosodi-n-propylamine
Pentachlorophenol
Phenol
Bis (2-ethylhexyl) phthalate
Butyl benzyl phthalate
Di-n-butyl phthalate

Di-n-octyl phthalate
Diethyl phthalate
Dimethyl phthalate
1,2-benzanthracene (benzo(a)anthracene)
Benzo(a)pyrene (3,4-benzopyrene)
3,4-benzofluoranthene (benzo(b)fluoranthene)
11,12-benzofluoranthene (benzo(k)fluoranthene)
Chrysene
Anthracene
1,12-benzoperylene (benzo(ghi)perylene)
Fluorene
2-chloronaphthalene
2,4,6-trichlorophenol
Parachlorometa cresol
Chloroform (trichloromethane)
2-chlorophenol
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichorobenzene
3,3-dichlorobenzidine
1,1-dichloroethylene
1,2-trans-dichloroethylene
2,4-dichlorophenol
1,2-dichloropropane (1,3-dichloropropane)
2,4-dimethylphenol
2,4-dinitrotoluene
2,6-dinitrotoluene
1,2-diphenylhydrazine
Ethylbenzene
Fluoranthene

4-chlorophenyl phenyl ether
4-bromophenyl phenyl ether
Bis (2-chloroisopropyl) ether
Bis (2-chloroethoxy) methane
Methylene Chloride (dichloromethane)
Methyl Chloride (chloromethane)
Methyl bromide (bromomethane)
Bromoform (tribromomethane)
Dichlorobromomethane
Chlorodibromemethane
Hexachlorobutadiene
Hexachlorocyclopentadiene
Isophorone
Naphthalene
Nitrobenzene
2-nitrophenol
4-nitrophenol
2,4-dinitrophenol
4,6-dintro-o-cresol
N-nitrosodimethylamine
N-nitrosodiphenylamine
Phenanthrene
1,2,5,6-dibenzanthracene (dibenzo(a,h)anthracene)
Indeno (1,2,3-cd) pyrene
(2,3-o-phenylene pyrene)
Pyrene
Tetrachloroethylene
Toluene
Trichloroethylene
Vinyl Chloride (chloroethylene)
Aldrin
Dieldrin
Chlordane (technical mixture and metabolites)
4,4-DDT
4,4-DDE (p,p-DDX)
4,4-DDD (p,p-TDE)
Alpha-endosulfan
Beta-endosulfan
Endosulfan sulfate
Endrin
Endrin aldehyde
Heptachlor
Heptachlor epoxide (BHC hexachlorocyclohexane)
Alpha-BHC
Beta-BHC
Gamma-BHC
Delta-BHC (PCB polychlorinated biphenyls)
PCB-1242 (Arochlor 1242)
PCB-1254 (Arochlor 1254)
PCB-1221 (Arochlor 1221)
PCB-1232 (Arochlor 1232)
PCB-1248 (Arochlor 1248)
PCB-1260 (Arochlor 1260)
PCB-1016 (Arochlor 1016)
Toxaphene

C. INFLUENT MONITORING REQUIREMENTS	PAGE NUMBER 7 of 12
	PERMIT NUMBER MO-0120081

The facility is required to meet a removal efficiency of 65% or more. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Influent			
Biochemical Oxygen Demand$_5$	mg/L	Once/month	grab
Total Suspended Solids	mg/L	Once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE March 28, 2009.

MO 780-0010 (8/91)

D. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to area-wide wastewater treatment system within 90 days of notice of its availability.

4. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

D. SPECIAL CONDITIONS (continued)

6. Water Quality Standards
   (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
   (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
   (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

8. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

9. The permittee shall develop and implement a program for maintenance and repair of the collection system. The recommended guidance is the US EPA's Guide For Evaluating Capacity, Management, Operation, And Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document number EPA 305-B-05-002). The permittee shall submit a report semi-annually in April and October to the Southeast Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.

10. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
001	100	Annually	Grab	August

D. SPECIAL CONDITIONS (continued)

10. WET Test (continued):

(a) Test Schedule and Follow-Up Requirements

(1) Perform a SINGLE-dilution test in the months and at the frequency specified above. For tests which are successfully passed, submit test results USING THE DEPARTMENT'S WET TEST REPORT FORM #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.

(a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
(b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
(c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
(d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
(e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
(f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
(g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
(h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
(i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
(j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
(k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
(l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
(m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.

(2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur), until one of the following conditions are met:

(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(4) Failure of at least two multiple-dilution tests during any period of accelerated monitoring violates the permit narrative requirement for aquatic life protection.

(5) The permittee shall submit a concise summary of all test results for the test series to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(6) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

D. SPECIAL CONDITIONS (continued)

10. WET Test (continued):

(7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(9) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.

(10) Submit a concise summary in tabular format of all test results with the annual report.

(b) PASS/FAIL procedure and effluent limitations:

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other Federal guidelines as appropriate or required.

(2) To pass a multiple-dilution test:

(a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; **OR,**

(b) For facilities with an AEC greater than 30% the LC50 concentration must be greater than 100%; **AND,**

(c) all effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal.

(2) All tests, including repeat tests for previous failures, shall include both test species listed below.

(3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS.

(4) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(5) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(6) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(7) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, ½ AEC and ¼ AEC;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

D. SPECIAL CONDITIONS (continued)

10. WET Test (continued):

(8) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
(9) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0120081
CHARLESTON WASTEWATER TREATMENT LAGOON

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of storm water from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified. This operating permit will be issued for a period of five years.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Major ☒, Minor ☐, Industrial Facility ☐; Variance ☐;
Master General Permit ☐; General Permit Covered Facility ☐; and/or permit with widespread public interest ☐.

Part I – Facility Information

Facility Type: POTW
Facility SIC Code(s): 4952

Facility Description:
This facility is a four (4) cell lagoon, with three (3) of the cells being aerated and the fourth cell being facultative. After treated wastewater leaves the fourth cell it then flows to the Weir Structure and then is discharged from Outfall #001. The design flow for this facility is 1.5 MGD.

Application Date: September 8, 2008
Expiration Date: August 22, 2007
Last Inspection: January 12, 2006 In Compliance ☒; Non-Compliance ☐

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	2.3	Equivalent to Secondary	Municipal	2.4

Outfall #001
Legal Description: NW ¼, SE ¼, Sec. 33, T27N, R16E, Mississippi County
Latitude/Longitude: +36562565/-08919361
Receiving Stream: Tributary to Stevenson Bayou (U)
First Classified Stream and ID: Stevenson Bayou I (03135)
USGS Basin & Sub-watershed No.: (08020201 – 010001)

Water Quality History:
TSS effluent violation in April 2008.

Comments:
On August 23, 2002, the department issued the permittee Missouri State Operating Permit number MO-0120081 for a period of five (5) years, per the Missouri Clean Water Law. On January 29, 2007, the department sent correspondence to the permittee and requested that they submit a renewal application for their operating permit; however, the renewal application was not received. On August 22, 2007, the operating permit expired, by its own terms. On February 27, 2008, the department sent correspondence to the permittee requesting that they submit a complete application for renewal for this facility, and on May 1, 2008, the department (Central Office) received the permittee's renewal application. However, the application was incomplete; therefore, on May 5, 2008, the department returned the application to the permittee as being incomplete and requested the application be completed and re-submitted to the department. On September 4, 2008, the department sent correspondence to the permittee requesting the renewal application be completed and submitted to the department. In addition, the September 4, 2008, correspondence informed the permittee they were in violation of the Missouri Clean Water Law and its implementing regulations, as follows:

- Failed to apply for renewal of the Missouri State Operating Permit at least 180 day before expiration, in violation of RSMo §§ 644.051.10 & 644.076.1; and 10 CSR 20-6.010(5)I; and
- Since August 22, 2007, operated, used or maintained a water contaminant source, which discharges to waters of the state, without an operating permit, in violation of RSMo §§ 644.051.2 & 644.076.1; and 10 CSR 20-6.010(1)(A) and 10 CSR 20-6.010(5)(A).

Finally the September 4, 2008, letter informed the permittee that failure to re-submit the operating permit within ten (10) days receipt of the correspondence, would leave no other option but to refer the matter to the department's Compliance and Enforcement Section. On September 8, 2008, the department received the permittee's renewal application; however, the permittee failed to supply the department with Part D – EXPANDED EFFLUENT TESTING DATA; Section 13.00.

Due to the failure and refusal of the permittee to supply the department with this information, which is required for all facilities that have a design flow over 1.0 MGD or a pretreatment program, staff drafting this operating permit has no other option but to assume via best professional judgment that effluent from this facility contains the toxics listed in Section 13.00 of Form B2, which are as follows: Metals, Cyanide, Phenol, Volatile Organic Compounds, Acid-Extractable Compounds, and Base-Neutral Compounds. Each pollutant or group of pollutants' monitoring requirement or effluent limitation is discussed Part V of this Fact Sheet.

In addition, the department's Pretreatment Coordinator informed staff drafting this operating permit that this facility does accept Industrial Wastewater from the Gates Corporation [40 CFR 403 General Pretreatment Standards], which was affirmed by Gates Corporation staff on September 12, 2008. The pollutants of concern from the Gates facility that discharges to this facility are Oil & Grease, COD, BOD_5, Zinc, TSS, Copper, Lead, Antimony. The City's application indicated that the Charleston WWT Lagoon does not accept industrial process wastewater.

- Failed to inform the department that the facility accepts industrial pretreated wastewater, in violation of RSMo §644.076.

For the toxics listed above regarding the industrial process wastewater, the department will give interim monitoring and final effluent limitations for the appropriate parameters.

Referral of this matter to the Department's Compliance and Enforcement Section for the above cited violations is still under review.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
  - Municipalities ☒
  - Public Sewer District: ☐
  - County ☐
  - Public Water Supply Districts: ☐
  - Private sewer company regulated by the Public Service Commission: ☐
  - State or Federal agencies: ☐

PART II – CONTINUED:

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) and/or fifty (50) or more service connections.

This facility currently requires an operator with a "C" Certification Level. Please see **Appendix A – Classification Worksheet.** Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator's Name: David Harris
Certification Number: 2932
Certification Level: A

Part III – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☐
Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
Losing [10 CSR 20-7.015(4)]: ☐
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

10 CSR 20-7.031 Missouri Water Quality Standards, the department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Tributary to Stevenson Bayou	U	---	General Criteria	08020201	MS Alluvial/ St. Johns Bayou
Stevenson Bayou	C	03135	LWW, AQL, WBC***		

* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).
** - Ecological Drainage Unit
*** - UAA conducted in July 2005 and the WBCR was approved in September 2005.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Tributary to Stevenson Bayou (U)	0.0	0.0	0.0

MIXING CONSIDERATIONS TABLE:
Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:
Receiving stream monitoring was required in the previous expired operating permit. It was required at the confluence of Outfall #001 and the receiving stream, above the confluence, and ¼ mile downstream of the confluence. This requirement is being removed from the permit due to the fact that Mixing Considerations do not apply to Unclassified Tributary. This permit will not contain receiving steam monitoring requirements.

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

Not Applicable ☒;
The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402I; 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

☒ - All limits in this Factsheet are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

☒ - Renewal no degradation proposed and no further review necessary.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:
Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

☒ - Sludge is retained in the lagoon.

COMPLIANCE AND ENFORCEMENT:
Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

Not Applicable ☒;
The permittee/facility is not currently under Water Protection Program enforcement action.

PRETREATMENT PROGRAM:
The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:
- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Not Applicable ☒;
The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

Applicable ☒;
A RPA was conducted on Total Ammonia as Nitrogen, please see **APPENDIX B – RPA RESULTS.**

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm .

Applicable ☒;
Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSOS), AND INFLOW & INFILTRATION (I&I):
Collection systems are a critical element in the successful performance of the wastewater treatment process. Under certain conditions, poorly designed, built, managed, operated, and/or maintained systems can pose risks to public health, the environment, or both. Causes of SSOs include, but are not limited to, the following: high levels of I&I during wet weather; blockages; structural, mechanical, or electrical failures; collapsed or broken sewer pipes; insufficient conveyance capacity; and vandalism. Effective and continuous management, operation, and maintenance, as well as ensuring adequate capacity and rehabilitation when necessary are critical to maintaining collection system capacity and performance while extending the life of the system.

Applicable ☒;
The permittee is required to develop or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Not Applicable ☒;
This permit does not contain a SOC.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
A plan to schedule activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Not Applicable ☒;
At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:
As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ☒;
This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the department to release into a given stream after the department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

Applicable ☒;
Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

WLA MODELING:
There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

Not Applicable ☒;
A WLA study was either not submitted or determined not applicable by department staff.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

Applicable ☐;
In accordance with the Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System. Furthermore, WET testing is a means by which the department determines that [10 CSR 20-7.031(3)(D, F, & G)] are being met by the permitted facility. In addition to justification for the WET testing, WET tests are required under [10 CSR 20-6.010(8)(A)4] to be performed by specialists who are properly trained in conducting the test according to the methods prescribed by the Federal Government as referenced in [40 CFR Part 136]. WET test will be required by all facilities meeting the following criteria:
☒ Facility is a designated Major.
☐ Facility continuously or routinely exceeds its design flow.
☐ Facility (industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☐ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☐ Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

Not Applicable ☒;
This facility does not discharge to a 303(d) listed stream.

Part V – Effluent Limits Determination

Outfall #001 – Main Facility Outfall
EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*	NO	
BOD_5	MG/L	1		65	45	NO	
TSS	MG/L	1		110	70	NO	
PH	SU	1	≥6.0		≥6.0	NO	
TEMPERATURE	°C	1/9	*		*	YES	°F
AMMONIA AS N (MAY 1 – OCT 31)	MG/L	2/3/5	6.6		1.4	YES	*/*
AMMONIA AS N (NOV 1 – APR 30)	MG/L	2/3/5	9.3		2.9	YES	*/*
ESCHERICHIA COLI	**	1/2	Please see Escherichia Coli (E. coli) in the Derivation and Discussion Section below.				
OIL & GREASE (MG/L)	MG/L	1	15		10	YES	***
CYANIDE, AMENABLE TO CHLORINATION	µg/L	9	*		*	YES	***
TOTAL HARDNESS	mg/L	9	*		*	YES	***
ANTIMONY, TOTAL RECOVERABLE	mg/L	9	7.0		3.5	YES	***
ARSENIC, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
BERYLLIUM, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
CADMIUM, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
CHROMIUM (III), TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
CHROMIUM (VI), TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
COPPER, TOTAL RECOVERABLE	µg/L	9	19		9.5	YES	***
IRON, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
LEAD, TOTAL RECOVERABLE	µg/L	9	9.3		4.7	YES	***
MERCURY, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
NICKEL, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
SELENIUM, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
SILVER, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
THALLIUM, TOTAL RECOVERABLE	µg/L	9	*		*	YES	***
ZINC, TOTAL RECOVERABLE	µg/L	9	180		89.6	YES	***
TOTAL TOXIC ORGANICS	µg/L	9	*		*	YES	***
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only
** - # of colonies/100mL; the Monthly Average for Fecal Coliform is a geometric mean.
*** - Parameter not previously established in previous state operating permit
N/A – Not applicable

Basis for Limitations Codes:

1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Lagoon Policy
5. Ammonia Policy
6. Dissolved Oxygen Policy
7. Antidegradation Policy
8. Water Quality Model
9. Best Professional Judgment
10. TMDL or Permit in lieu of TMDL
11. WET Test Policy

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow**. In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD_5)**. Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.** In 2003 the department's Water Quality Monitoring & Assessment Section (WQM&A) conducted a Physical/Chemical, results from this survey and receiving stream monitoring indicate that Technology Based Effluent Limitations of Equivalent to Secondary are protective of the receiving stream's Water Quality.

- **Total Suspended Solids (TSS)**. Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.** In 2003 the department's Water Quality Monitoring & Assessment Section (WQM&A) conducted a Physical/Chemical, results from this survey and receiving stream monitoring indicate that Technology Based Effluent Limitations of Equivalent to Secondary are protective of the receiving stream's Water Quality.

- **pH**. Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Receiving Stream Information.**

- **Temperature.** Monitoring requirement due to the toxicity of Ammonia varies by temperature.

- **Total Ammonia Nitrogen**. Staff drafting this Fact Sheet and operating permit conducted an RPA for Seasonal Total Ammonia as N, and both seasons were found to have reasonable potential to violate Water Quality Standards for the receiving stream; therefore, limitations are applicable, please see Appendix B- RPA Results. A CV value of 1.486 was calculated for Summer and a CV value of 0.821 was calculated for Winter. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. No mixing considerations allowed; therefore, WLA = appropriate criterion.

Season	Temp (°C)	pH (SU)	Total Ammonia Nitrogen CCC (mg N/L)	Total Ammonia Nitrogen CMC (mg N/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: May 1 – October 31, Winter: November 1 – April 30.

Staff utilized a modified Feed Forward Reaction decay formula to allow degradation for ammonia prior to reaching the first classified water body:

$[NH_3N]_t = [NH_3N]_{t=0} * e^{-kt}$

Where
$[NH_3N]_t$ = ammonia concentration at confluence with classified segment.
$[NH_3N]_{t=0}$ = ammonia concentration at pipe = C_e
k = NH_3 oxidation per day $(k_{1,20})\Xi_1^{(Temp-20)}$

$k_{1,20} = 0.3(day^{-1})$
Ξ_1 = temperature correction factor = 1.083

t = time for effluent to travel to first classified segment (in days) = 0.28.

- **Total Ammonia Nitrogen (continued).**

Travel time was calculated using site specific data obtained from WQM&A staff who conducted a PC survey in 2003. WQM&A staff indicated that the unclassified tributary was approximately 8 – 10 feet (in wetted width) and approximately 1 foot deep. From this staff calculated that the Cross-Sectional Area of the stream was 4.5 ft^2.

Summer: Temperature = 26°C
Given $k = (0.3)(1.083)^{(26-20)} = 0.4841$ and $t = 0.28$ days; $e^{-kt} = 0.8714$.

Which means 87.14% of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$WLA_{chonic} = (1.5 \text{ mg/L}) / 0.8714 = 1.72 \text{ mg/L}$
$WLA_{acute} = (12.1 \text{ mg/L}) / 0.8714 = 13.89 \text{ mg/L}$

$LTA_c = 1.72 \text{ mg/L} (0.557) = \mathbf{0.96 \text{ mg/L}}$ [CV = 1.486, 99th Percentile, 30 day average]
$LTA_c = 13.89 \text{ mg/L} (0.145) = 2.01 \text{ mg/L}$ [CV = 1.486, 99th Percentile]

$MDL = 0.96 \text{ mg/L} (6.88) = 6.6 \text{ mg/L}$ [CV = 1.486, 99th Percentile]
$AML = 0.96 \text{ mg/L} (1.50) = 1.4 \text{ mg/L}$ [CV = 1.486, 95th Percentile, n = 30]

Winter: Temperature = 6°C
Given $k = (0.3)(1.083)^{(6-20)} = 0.0982$ and $t = 0.28$ days; $e^{-kt} = 0.9724$.

Which means 97.24% of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$WLA_{chronic} = (3.1 \text{ mg/L}) / 0.9724 = 3.19 \text{ mg/L}$
$WLA_{acute} = (12.1 \text{ mg/L}) / 0.9724 = 12.44 \text{ mg/L}$

$LTA_c = 3.19 \text{ mg/L} (0.715) = \mathbf{2.28 \text{ mg/L}}$ [CV = 0.821, 99th Percentile, 30 day average]
$LTA_c = 12.44 \text{ mg/L} (0.244) = 3.04 \text{ mg/L}$ [CV = 0.821, 99th Percentile]

$MDL = 2.28 \text{ mg/L} (4.10) = 9.3 \text{ mg/L}$ [CV = 0.821, 99th Percentile]
$AML = 2.28 \text{ mg/L} (1.26) = 2.9 \text{ mg/L}$ [CV = 0.821, 95th Percentile, n = 30]

- ***Escherichia coli (E. coli)***. This facility may be required to have *E. coli* effluent limitations when Missouri adopts the implementation of the *E. coli* standards, as per [10 CSR 20-7.031(4)(C)].

- **Oil & Grease**. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

- **Cyanide, Amenable to Chlorination.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Cyanide in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

Metals
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in EPA/505/2-90-001 and "The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion" (EPA 823-B-96-007). General warm-water fishery criteria apply and water hardness = 162 mg/L.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Antimony	N/A	N/A
Copper	0.960	0.960
Lead	0.720	0.720
Zinc	0.978	0.986

Conversion factor for Pb is hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- **Total Hardness**. Monitoring requirement only. The toxicity of metals is effected by the Total Hardness.

- **Antimony, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). In addition, the permittee failed to notify the department that industrial process wastewater is accepted by the permittee and is discharged from Outfall #001. Antimony is one of the Pollutants of Concern (POC) from the industrial facility, which demonstrates that effluent has a reasonable potential to violate Missouri's Water Quality Standards (no data available). Therefore, effluent limitations are applicable. Protection of Human Health – Fish Consumption is 4,300µg/L. Mixing considerations are not applicable; therefore, WLA = criteria.

  WLA_{HHF} = 4300 µg/L

  LTA_c = 4300(.527) = 2266 µg/L [CV = 0.6, 99th Percentile]

  MDL = 2266(3.11) = 7047 µg/L [CV = 0.6, 99th Percentile]
  AML = 2266(1.55) = 3512 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Arsenic, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Arsenic in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Beryllium, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Beryllium in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Cadmium, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Cadmium in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Chromium (III), Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Chromium (III) in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Chromium (VI), Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Chromium (VI) in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Copper, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). In addition, the permittee failed to notify the department that industrial process wastewater is accepted by the permittee and is discharged from Outfall #001. Copper is one of the POC from the industrial facility, which demonstrates that effluent has a reasonable potential to violate Missouri's Water Quality Standards (no data available). Therefore, effluent limitations are applicable. Protection of Aquatic Life CCC = 11 µg/L and CMC = 21 µg/L. Mixing considerations are not applicable; therefore, WLA = criteria.

  $WLA_{chronic}$ = 11 µg/L / 0.960 = 11.5 µg/L
  WLA_{acute} = 21 µg/L / 0.960 = 21.9 µg/L

  LTA_c = 11.5(.527) = **6.1 µg/L** [CV = 0.6, 99th Percentile]
  LTA_c = 21.9(.321) = 7.0 µg/L [CV = 0.6, 99th Percentile]

  MDL = 6.1(3.11) = 19 µg/L [CV = 0.6, 99th Percentile]
  AML = 6.1(1.55) = 9.5 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Iron, Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Iron in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Lead, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). In addition, the permittee failed to notify the department that industrial process wastewater is accepted by the permittee and is discharged from Outfall #001. Lead is one of the POC from the industrial facility, which demonstrates that effluent has a reasonable potential to violate Missouri's Water Quality Standards (no data available). Therefore, effluent limitations are applicable. Protection of Aquatic Life criteria CCC = 4 µg/L and CMC 109 µg/L. Mixing considerations are not applicable; therefore, WLA = criteria.

  $WLA_{chronic}$ = 4 µg/L / 0.720 = 5.6 µg/L
  WLA_{acute} = 109 µg/L / 0.720 = 151.4 µg/L

  LTA_c = 5.6(.527) = **3.0 µg/L** [CV = 0.6, 99th Percentile]
  LTA_c = 151.4(.321) = 48.6 µg/L [CV = 0.6, 99th Percentile]

  MDL = 3.0(3.11) = 9.3 µg/L [CV = 0.6, 99th Percentile]
  AML = 3.0(1.55) = 4.7 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Mercury, Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Mercury in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Nickel, Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Nickel in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Selenium, Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Selenium in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Silver, Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Silver in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Thallium, Total Recoverable.** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has Thallium in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **Zinc, Total Recoverable**. The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). In addition, the permittee failed to notify the department that industrial process wastewater is accepted by the permittee and is discharged from Outfall #001. Lead is one of the POC from the industrial facility, which demonstrates that effluent has a reasonable potential to violate Missouri's Water Quality Standards (no data available). Therefore, effluent limitations are applicable. Protection of Aquatic Life criteria CCC = 161 µg/L and CMC 176 µg/L. Mixing considerations are not applicable; therefore, WLA = criteria.

  $WLA_{chronic}$ = 161 µg/L / 0.986 = 163.3 µg/L
  WLA_{acute} = 176 µg/L / 0.978 = 180 µg/L

  LTA_c = 163.3(.527) = 86.1 µg/L [CV = 0.6, 99th Percentile]
  LTA_c = 180(.321) = **57.8 µg/L** [CV = 0.6, 99th Percentile]

  MDL = 57.8(3.11) = 180 µg/L [CV = 0.6, 99th Percentile]
  AML = 57.8(1.55) = 89.6 µg/L [CV = 0.6, 95th Percentile, n = 4]

- **Total Toxic Organics (TTO).** The permittee failed to supply the department with Expanded Effluent Data (see Comment Section) for all pollutants/parameters listed in Section 13.00 of their renewal application (Form B2). Due to this, staff is requiring a monitoring requirement only to determine if this facility has any of the expanded testing data (as required in Form B2 – Renewal Application) in their effluent. Upon the next renewal of this operating permit, staff will conduct a reasonable potential to determine if effluent from this facility has a potential or is causing a violation of the receiving stream's Water Quality.

- **WET Test**. WET Testing schedules and intervals are established in accordance with the department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.
  - ☐ Chronic
  - ☒ Acute

  ☐ No less than **ONCE/PERMIT CYCLE:**
  - ☐ Municipality or domestic facility with a design flow ≥ 22,500 gpd, but less than 1.0 MGD.
  - ☐ Other, please justify.

  ☒ No less than **ONCE/YEAR:**
  - ☒ Facility is designated as a Major facility or has a design flow ≥ 1.0 MGD.
  - ☐ Facility continuously or routinely exceeds their design flow.
  - ☐ Facility exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
  - ☒ Facility has Water Quality-based effluent limitations for toxic substances (other than NH_3).

  ☐ No less than **TWICE/YEAR:**
  - ☐ Facility is subject to production processes alterations throughout the year.
  - ☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
  - ☐ Facility has been granted seasonal relief of numeric limitations.

  Allowable Effluent Concentration (AEC) calculations determine if the facility is to conduct single dilution or multiple dilution WET testing. Facilities that discharge to unclassified or Class C receiving streams, the AEC% is 100%. Facilities with less than 100% for an AEC% will have multiple dilution WET testing. Facilities that discharge to Lakes and have Acute WET testing, the AEC% is 100% due to [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] ZID not allowed for Lakes.

- **Minimum Sampling and Reporting Frequency Requirements**. The previous state operating permit established once per week minimum sampling requirement for Flow, BOD_5, TSS, and pH. It also established once per month minimum sampling requirement for Ammonia and Temperature. As per [10 CSR 20-7.015(C)1.], the department will develop a wastewater sampling program based on design flow that will require at a minimum one (1) wastewater sample per year for each 50,000 gallons per day of effluent. In addition, Missouri Effluent Regulation, 10 CSR 20-7.015(C)1.B., establishes that point sources that discharge more than one (1) MGD will be required at a minimum to collect twenty (20) wastewater samples per year.

  By applying the criteria as listed in [10 CSR 20-7.015(C).1], the minimum sampling requirement for this facility is 30 samples per year. 30/12 months = 2.5 samples per month. The minimum sampling requirement as established in the expired operating permit satisfies the above cited regulations, and therefore, will be retained.

  In addition, Total Ammonia as N and Temperature will be modified to once per week.

  Additionally, the Toxic (metal) pollutants of Antimony, Copper, Lead, and Zinc, will receive a minimum sampling requirement of once per month. This is due to the fact that these are the pollutants of concern that this facility accepts from an industrial source, but are not treated at this facility.

  The remaining Toxic (metal) pollutants (not listed above) will receive a minimum sampling requirement of once per quarter, due to the fact that these metals are not pollutants of concern. These pollutants will be evaluated during the next operating permit renewal; however, due to the fact that once per quarter sampling will not determine a sound variability. Meaning that the once per quarter monitoring may continue during the next operating permit renewal. Additionally, minimum monitoring requirements and/or the establishing of effluent limits for these pollutants depends on the results.

  The TTO (various pollutants) monitoring requirement will be conducted once annually. It is recommended that this test is conducted prior to the renewal application, so that results of this test can be used in the next renewal. Therefore, this test is recommended to be conducted in December of 2008, and the results will be submitted in the February 2009 Discharge Monitoring Report.

Part VI – Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:
As per the Missouri Clean Water Law, the Missouri Clean Water Commission, and the federal Clean Water Act, persons wishing to comment on Missouri State Operating Permits are directed to do so by a department approved Public Notice coversheet. This Public Notice coversheet is attached to a Missouri State Operating Permit during the Public Notice period.

☒ - The Public Notice period for this operating permit was from October 24, 2008, to November 27, 2008. The owner, City of Charleston, did not respond during or after the Public Notice of this operating permit. The Missouri Coalition for the Environment (coalition) did submit comments regarding this operating permit. However, the coalition's comments did not contain comments or concerns to justify not issuing this operating permit. As part of the issuance process, the department will submit its response to the coalition. The issuance of this operating permit is scheduled for December 12, 2008.

This operating permit was revised to update the Interim & Final Effluent limitations Table regarding the TTO requirement. The operating permit issued on January 23, 2009, indicated that the samples were to be taken in December 2008 and the report was to be sent to the department in February 2009. The revision not requires that the test be taken once per permit cycle and the results be submitted on or before February 28, 2010.

DATE OF FACT SHEET: SEPTEMBER 12, 2008 **REVISED:** JANUARY 26, 2009

COMPLETED BY:

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Part VII – Appendices

APPENDIX A - CLASSIFICATION WORKSHEET:

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
Maximum Population Equivalent (P.E.) served (Max 10 pts.)	1 pt./10,000 PE or major fraction thereof.	2
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	2
EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:		
Missouri or Mississippi River	0	--
All other stream discharges except to losing streams and stream reaches supporting whole body contact	1	--
Discharge to lake or reservoir outside of designated whole body contact recreational area	2	--
Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation	3	3
PRELIMINARY TREATMENT – Headworks		
Screening and/or comminution	3	--
Grit removal	3	--
Plant pumping of main flow (lift station at the headworks)	3	3
PRIMARY TREATMENT		
Primary clarifiers	5	--
Combined sedimentation/digestion	5	--
Chemical addition (except chlorine, enzymes)	4	--
REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)		
Lab work conducted outside of plant	0	--
Push – button or visual methods for simple test such as pH, Settleable solids	3	3
Additional procedures such as DO, COD, BOD, titrations, solids, volatile content	5	--
More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.	7	--
Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph	10	--
ALTERNATIVE FATE OF EFFLUENT		
Direct reuse or recycle of effluent	6	--
Land Disposal – low rate	3	--
High rate	5	--
Overland flow	4	--
Total from page **ONE (1)**	----	13

APPENDIX A - CLASSIFICATION WORKSHEET (CONTINUED):

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)		
Variation do not exceed those normally or typically expected	0	0
Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow	2	--
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	--
Raw wastes subject to toxic waste discharge	6	--
SECONDARY TREATMENT		
Trickling filter and other fixed film media with secondary clarifiers	10	--
Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)	15	--
Stabilization ponds without aeration	5	5
Aerated lagoon	8	8
Advanced Waste Treatment Polishing Pond	2	--
Chemical/physical – without secondary	15	--
Chemical/physical – following secondary	10	--
Biological or chemical/biological	12	--
Carbon regeneration	4	--
DISINFECTION		
Chlorination or comparable	5	--
Dechlorination	2	--
On-site generation of disinfectant (except UV light)	5	--
UV light	4	--
SOLIDS HANDLING – SLUDGE		
Solids Handling Thickening	5	--
Anaerobic digestion	10	--
Aerobic digestion	6	--
Evaporative sludge drying	2	--
Mechanical dewatering	8	--
Solids reduction (incineration, wet oxidation)	12	--
Land application	6	--
Total from page **TWO (2)**	----	13
Total from page **ONE (1)**	---	13
Grand Total	---	26

☐ - A: 71 points and greater
☐ - B: 51 points – 70 points
☒ - C: 26 points – 50 points
☐ - D: 0 points – 25 points

APPENDIX B – RPA RESULTS:

CONSTITUENT	CMC*	RWC ACUTE*	CCC*	RWC CHRONIC*	REASONABLE POTENTIAL	# OF SAMPLES**	CV***
TOTAL AMMONIA AS N (SUMMER)	12.1	**51.6**	1.5	**51.6**	YES	37	1.486
TOTAL AMMONIA AS N (WINTER)	12.1	**44.8**	3.1	**44.8**	YES	37	0.821

For the purpose of conducting a RPA, staff did not utilize the Ammonia Decay (as noted in the CCC). This is due to the fact that the RWC Acute was above the CMC criteria, which can not be exceeded.
* - Units are mg/L.
** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.
*** - Coefficient of Variation (CV) is calculated by dividing the Mean of the sample by the Standard Deviation of the sample.

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2).
A more detailed version including calculations of this RPA is available upon request.

ATTACHMENT 12

NPDS Permit
MO-0120081

Sent in for renewal in July 2013
called Brent Farris Bennett DNR

12-16-13
+
2-4-14
+
4-1-14 still had not looked at it.
he said not to worry about renewal he would get to it when he has time

called + talked to Brent on 12-29-14
he said he had not got to the permit renewal yet but we are OK.

Date	BOD mg/l	Sus.Solids mg/l	Temp °C	Ammonia mg/l		Limits		
	monthly average	monthly average	monthly average	monthly average				
1/1/2011	16.6	11.4	2.8	10.7		BOD	65mg/l	
2/1/2011	22.5	9.25	6.5	13.5		S.S.	45mg/l	
3/1/2011	28.32	14.8	10.6	12.2		Nh3	5/1-9/31	1.4mg/l
4/1/2011	18.8	12.5	17.2	10.6			11/1-4/30	2.9mg/l
5/1/2011	8.9	14	21	7.68				
6/1/2011	6.9	11.5	27.7	1.04				
7/1/2011	6.92	17.25	28.9	0.133				
8/1/2011	7.74	23.5	21.5	0.192				
9/1/2011	8.99	18.6	18.4	0.085				
10/1/2011	12.5	17.75	14	0.147				
11/1/2011	12.5	17.7	11.1	0.147				
12/1/2011	11.26	11.25	8.1	1.27				
1/1/2012	8.97	4.6	7.4	14.8				
2/1/2012	16.2	8.75	14.5	9.01				
3/1/2012	18.6	6.12	16.7	6.23				
4/1/2012	18.2	19	23.7	8.95				
5/1/2012	15.7	24.8	23.6	1.8				
6/1/2012	8.46	7.75	28	0.363				
7/1/2012	7.28	16.4	30.6	0.195				
8/1/2012	7.28	20.25	27.7	0.09	Reactor went on line			
9/1/2012	7.21	27.25	23.8	0.05				
10/1/2012	7.93	19.6	15.9	0.05				
11/1/2012	7.27	22.25	11.7	0.05				
12/1/2012	14.6	19.25	10.3	0.05				
1/1/2013	15.8	19.6	4.5	1.599				
2/1/2013	20.9	20.75	8	1.08				
3/1/2013	11.4	21.75	8.6	0.025				
4/1/2013	14.4	16.2	16.6	3.89				
5/1/2013	19.9	22.75	22.1	4.63				
6/1/2013	6.98	17.5	22.5	0.025				

7/1/2013		7.4		11		27.6		0.025			
8/1/2013		9.77		9.25		27.3		0.025			
9/1/2013		7.5		15.4		26.1		0.025			
10/1/2013		5.4		9.25		19.7		0.025			
11/1/2013		12.45		8.6		11.8		0.025			
12/1/2013		20.62		21.6		7.16		0.459			

David Harris

John ,

I called you earlier about our elevated ammonia levels. Since then I have contacted Smith & Co. and a representative from Lemna. The only conclusion we could come up with is there was something dumped into the collection system that killed off our nitrification bacteria. The NH3 levels are going down so the nitrification bacteria is growing back. We have also bought 10 gallons of Nitro Bacteria Supplement to help reseed our bacteria also we increased NH3 monitoring . On 5/20/13 our effluent NH3 was < 0.05 mg/l . Whatever it was that moved through is apparently gone and our reseeding has worked.

Thanks,

David Harris
Public Works Director
City of Charleston, Mo.
PH 573.683.3325
FX 573.683.3297

David Harris

Wesley,

We spoke on Thursday 2/6/14 about our NH3 average for January being a little high, 5.8 for the month. After speaking with Greg Bell, one of engineers with Smith & Co , we believe this could be due to the extremely cold weather. The temperature of the water for January was about 2° C. with our finishing pond being iced over for many of the days. We plan to run more than usual NH3 test of our effluent in February and reseed the nitrifying bacteria when it warms up.

Thanks,

David Harris
Public Works Director
City of Charleston, Mo.
PH 573.683.3325
FX 573.683.3297
Cell 573.233.5842

AerationWorks
Global Maintenance & Installation Services
A Division of Environmental Dynamics International
5601 Paris Rd. Columbia, MO. 65202-9399
TELEPHONE (573) 474-9456 FAX (573) 474-6988

EDI Aeration Works PROPOSAL #2014-137

TO: Mr. David Harris
City of Charleston, MO

RE: Extended Warranties and Routine Maintenance
EDI FlexAir Aeration/Mixing System

Dear Mr. Harris:

EDI Aeration Works is pleased to offer the following extended warranty Proposal for the EDI Aeration/Mixing System currently in service at the Charleston Wastewater Treatment Plant. The proposal includes inspections, routine maintenance, forensic testing of the membranes and an option for a total membrane replacement. The proposal is for budgetary purposes and can be modified as required to best suit the objectives of the City.

Maintenance Service:

The scope of this proposal includes labor cost, travel and living expenses, as well as any specialized construction equipment cost required to complete the scope of work outlined below.

EDI Aeration Works is uniquely capable of installing and maintaining EDI equipment. The crew that will be employed on-site has many years of servicing all types of EDI's aeration equipment, and have or will furnish all the specialized equipment to maintain this particular system. Aeration Works will insure that the installation meets all of EDI's specifications and directions.

Maintenance Programs can be beneficial from both a budgeting and staffing perspective. EDI Aeration Works believes it is in our best interest to listen to the needs of our customer and customize maintenance programs accordingly. Based on your input, it appears as though a multi-year maintenance contract inclusive of a complete membrane changeout at the end to agreement may work well for you. For comparative purposes, we have also included information and pricing on a more traditional preventative maintenance program. Details are as follows:

Preventative Maintenance Program.

The Preventative Maintenance Program allows facility operators to outsource the regularly scheduled maintenance of their aeration systems. EDI assumes the burden of maintenance and will inspect a subset of the diffuser membranes to determine the overall condition and rate of aging as well as make any required system repairs as part of the service agreement. Repairs will be performed at no additional cost to the owner. **When this program is chosen as part of a new EDI aeration system sale, the mechanical warranty is extended as long as a service agreement remains in place.** Aeration Works can inspect an older system and a preventative maintenance program can be offered. Note: The Charleston system was recently refurbished by the Aeration Works crews and therefore is eligible for the program.

The Infinity Program. The Infinity Program offers the same mechanical warranty and services as the Preventative Maintenance Plan but goes one step further by guaranteeing the performance of the aeration system. Under this program, EDI maintains the physical condition of the membranes through

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preventative maintenance procedures and will periodically measure the performance of the membrane. EDI Aeration Works will replace or adjust the equipment to ensure the aeration system operates within a pre-determined performance envelope. Performance is defined as the ability of the membranes to release the required airflow without adding a specified additional pressure on the blowers.

The benefits of this program are:

1. No funding surprises when unexpected mechanical problems do surface.
2. The yearly fee can cover both ancillary parts and labor.
3. New membranes are scheduled to be supplied and replaced on a defined frequency, which will increase the efficiency of the wastewater treatment plant.

Proposal:

Preventative Maintenance Program.

- The Preventative Maintenance Program is provided in 8 year increments.
- A visual inspection of the entire lagoon will be completed once every 2 years to identify any potential problem areas.
- During the scheduled visits, a physical inspection of a subset of the aeration diffuser assemblies will be completed. During this inspection the following will be performed:
  - All airlines that feed the individual diffusers will be inspected and maintained as required.
  - Diffuser cores inspected and maintained.
  - Any ripped or torn membranes will be replaced up to a maximum of 15 membranes.
- Any maintenance required on the diffusers will be performed.
- This program does not warrant the condition of the membrane.
- During the detailed inspection, membranes will be harvested from the lagoons, and taken to EDI laboratory for forensic analysis. A report detailing the condition of the membranes will be provided to the owner.
- During the 8 year period, EDI is responsible for all cost associated with keeping the aeration equipment fully maintained.
- Diffuser ropes and floats will be inspected and maintained. Any float not visible on the water surface will be replaced.

Infinity Maintenance Program:

- The Infinity program is provided in 8 year increments.
- A visual inspection of the entire lagoon will be completed once every 2 years to identify any potential problem areas.
- During the scheduled visits, a physical inspection of a subset of the aeration diffuser assemblies will be completed. During this inspection the following will be performed:
  - All airlines that feed the individual diffusers will be inspected and maintained as required.
  - Diffuser cores inspected and maintained.
  - Any ripped or torn membranes will be replaced.
  - The aeration system will also be observed to determine if any maintenance is require prior to the scheduled detailed inspection.
- Any maintenance required on the diffusers (membranes included) will be performed.
- This program does warrant the condition of the membrane.
- During the detailed inspection, membranes will be harvested from the lagoons, and taken to EDI laboratory for analysis. A report detailing the condition of the membranes will be provided.
- **All membranes will be replaced with new membranes during the inspection in year eight.**
- During the 8 year period, EDI is responsible for all cost associated with keeping the diffuser equipment fully maintained.
- Diffuser ropes and floats will be inspected and maintained. Any float not visible on the water surface will be replaced.

Proposal Notes:

- Bid assumes that the lagoons will be ready for equipment maintenance upon arrival.
- The personnel that will be onsite have a Certificate of Completion for Confined Space Entry 29 CFR 1910.146.
- When applicable, Aeration Works will collect and deposit used membranes and other debris close to the lagoon. Owner is to provide a designated place (dumpster) and disposal is the responsibility of the Owner.
- **Bid assumes that the submerged PE piping, associated branch connections and fittings are intact and do not leak. While rare, breaks or leaks that exist or occur during the maintenance activity are not covered by this proposal and a diver may be required to repair underwater leaks.**
- Aeration Work's crew members have extensive safety training and Aeration Works will be responsible for following our safety procedures.
- Pricing does not include Davis-Bacon wages.
- Pricing includes one mobilization-demobilization for each scheduled inspection.

Price:

Preventative Maintenance Program: Based on an 8 year contract.

$2,410.00/year is the annual price for the program as described above.

Infinity Maintenance Program: Based on an 8 year contract.

$8,897.00/year is the annual price for the program as described above.

Proposal Terms:

First Year Maintenance Fee is due Net 30 upon receipt of Proposal Acceptance or Purchase Order. Subsequent Maintenance Fees are due Net 30 from January 1st of the Maintenance Year.

EDI Aeration Works reserves the right to review warranty pricing after every 8 year period.

An interest charge at a rate no less than prime plus 2% will be assessed on all late payments.

Date: October 17, 2014

EDI Aeration Works

Michael J Korman
Director of Business Operations
Aeration Works

EDI Proposal Aeration Works 2014 – 119

Environmental Dynamics International., hereinafter also referred to as **EDI** or the **Company,** offers this proposal to supply equipment. Any resulting contract between **EDI** and the **Purchaser** shall be subject to the following terms and conditions.

Services - Environmental Dynamics International is a manufacturer of water and wastewater treatment equipment and systems. EDI is not a consulting engineering firm and does not provide Professional Engineering services as part of our contracts to supply equipment hardware.

Process and Performance Warranties - Contracts for purchase of equipment accepted by EDI exclude any process or performance warranties related to system design. Additionally, no biological or process performance warranties are expressed or may be implied by the participation of EDI in this contract. Any biological or process performance warranty for systems supplied by the Company shall be specifically and independently detailed and signed as a separate contract by an authorized Officer of the Company.

Governing Law - Any proposal for equipment supply made by the Company as well as any contract between the Company and the Purchaser are deemed to be executed at Columbia, Missouri, USA, subject to correction for typographical or mathematical errors and governed by Missouri law.

Credit Approval - Performance of any contract by the Company is contingent upon Purchaser credit approval. Credit may be waived in lieu of a project materials payment bond. A materials payment bond supplied to the project Owner or Engineer by the Purchaser is acceptable. EDI reserves the right to hold shipment on delinquent accounts.

Force Majeure - Strikes, fires, accidents, war, reduced supply of fuel or raw materials or excessive cost thereof, or other restraints affecting shipments or curtailments in manufacturing or due to delays unavoidable by or beyond the control of the Company shall be governed by *force majeure.*

Costs and Damages - The Company shall in no instance be liable for indirect or special costs, consequential or liquidated damages or any penalties outside the written contract.

Special Hazards - Unusual conditions such as rock, poor foundation soils, excess water or other unusual site or safety conditions are not covered by this standard Company proposal. Extra costs emanating from unusual site or safety conditions shall be negotiated with written agreements developed at or subsequent to the time of discovery and prior to further work being completed by EDI.

Shipment & Delivery Times - Statements as to expected date of hardware shipment represent the Company's best judgment, but shipment on those dates is not guaranteed. The Purchaser hereby waives all claims to damages caused by delay in shipment or delivery of hardware.

Insurance - The Purchaser agrees to provide and maintain for the benefit of the Company adequate insurance for the equipment herein specified from the time of its shipment from EDI until paid for in full and the Purchaser agrees to assume all loss over and above that compensated for by such insurance. The Purchaser shall procure and pay for all public liability insurance during the installation of any EDI provided equipment.

Title of Ownership - All equipment and/or services ordered by Purchaser from the Company shall remain the property of the Company until fully paid for in cash.

Cancellation or Suspension - of any order will be accepted only upon terms that will indemnify the Company against loss. Additionally, the Company may invoice the Purchaser 15% of the agreed upon contract price.

Back Charges – must be approved by EDI, in writing, before they will be accepted. EDI will make every effort to offer prompt consideration and approval of legitimate back charges.

Invoicing - The Company may make partial billings of the contract price as various components of the equipment are shipped. When equipment is manufactured by EDI, but shipment is delayed by the Customer, EDI shall be paid in accordance with contract terms as though delivery had been accomplished.

Storage Charges - When EDI manufactures equipment to meet schedules established by the Purchaser, the Company reserves the right to invoice the Purchaser for storage charges on items held at EDI at the rate of 1% per month of the sale price.

Default for Non-Payment – Contracts in default of the payment terms may be subject to any or all of the following; should the Purchaser fail to pay the purchase price as agreed the Company may, a) retain as liquidated damages all partial payments made on account thereof to date without prejudice to any other claim for damages suffered by the Company for any cause, b) be allowed site access to recover hardware, c) obtain other balances due from arbitration or d) an interest charge on outstanding invoices billed at the rate of 1.5% per month, 18% per annum.

Attorney Fees – For any suits brought or retainage paid to attorneys to collect any part of the purchase price or to enforce any provision herein, the Purchaser will pay EDI attorney fees and related expenses including an administrative fee equal to the attorney fees.

Bankruptcy, Receivership or Insolvency Proceedings - Should bankruptcy, receivership or insolvency proceedings be instituted by or against the Purchaser or should the Purchaser make an assignment in favor of creditors, the unpaid balance of the purchase price shall immediately become due and payable at the option of the Company. Notwithstanding other arrangements to the contrary, the Company shall be free to enter premises where equipment for which the Company has not been fully paid may be located and remove said equipment as its property without prejudice to any further claims on amounts of damage which the Company may suffer from any cause.

Promissory Note - Acceptance of a promissory note or other evidence of debt for any part of price shall not be construed as payment.

Patent infringement - Any interference with Purchaser's use of equipment supplied by the Company on the grounds that such use constitutes an infringement of any patent shall impose no liability on the Company.

Spare or Potential Warranty Parts – If spare parts or potential warranty parts are required immediately, EDI may ship those parts subject to the following limitations: a) Purchaser agrees to pay for additional components or spare components including special freight charges. Reimbursement will be issued as a credit to the Purchasers account in the event potential warranty parts are verified as actual warranty defects and b) Contract price adjustments or price adjustments on additional or spare components are subject to EDI approval and original contact terms.

Defective, damaged, improper material or shortage - Claims will not be allowed unless written notice specifying the nature and extent of the defect, damage or shortage is received in the Company's office within fourteen (14) days from unloading – unless the defect, damage or shortage is of such a nature that it would not be reasonably discovered until the material is assembled and/or erected as a finished product, then the fourteen (14) days will begin from the date of commencement of assembly and/or erection.

Mechanical Warranty – As per **Manufacturers Limited Mechanical Warranty Statement**

_____ _____

Accepted by Buyer: Date:

_____ _____

Charleston, City of
Charleston WWT Lagoon
MO-0120081

STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.mo.gov

August 13, 2013

The Honorable Phillip Halter
City of Charleston
P.O. Box 216
Charleston, MO 63834

Dear Mr. Halter:

A routine compliance inspection of the wastewater treatment facility (WWTF) serving the City of Charleston, Missouri was conducted on June 12, 2013, by a representative of the Missouri Department of Natural Resources' Southeast Regional Office. Enclosed is a copy of the inspection report.

The report outlines the findings of the inspection and lists important recommendations that should be considered to ensure continued compliance.

If you have any questions, please contact me at the Southeast Regional Office, 2155 North Westwood Boulevard, Poplar Bluff, MO 63901 or call (573) 840-9750.

Sincerely,

SOUTHEAST REGIONAL OFFICE

Wesley Hargraves

Wesley Hargraves
Environmental Specialist

Enclosures: Report of Compliance Inspection
Photographs

C: Richard Goode, City Manager, City of Charleston
David Harris, Public Works Director, City of Charleston

SCANNED
Date: 8-15-13
IW

Recycled Paper

REPORT OF COMPLIANCE INSPECTION
CHARLESTON WWT LAGOON
MISSISSIPPI COUNTY
MO-0120081
August 13, 2013

INTRODUCTION

Pursuant to Section 644.026.1 RSMo of the Missouri Clean Water Law, a routine compliance inspection of the Charleston Wastewater Treatment Lagoon in Mississippi County, Missouri was conducted by Wesley Hargraves of the Missouri Department of Natural Resources' Southeast Regional Office on June 12, 2013.

This inspection was conducted to determine the facility's compliance with Missouri State Operating Permit (MSOP) MO-0120081, the Missouri Clean Water Commission Regulations, and the Missouri Clean Water Law. This report presents the findings and observations made during the compliance inspection.

FACILITY DESCRIPTION / HISTORY

MSOP MO-0120081 was last issued on January 23, 2009, and expires on January 22, 2014. This permit sets forth effluent limitations, monitoring requirements, and permit conditions, both standard and specific, that the permittee is to follow. The facility requires a Certified "C" operator and consists of the following:

Outfall #001 Three (3) cell aerated lagoon / one (1) cell lagoon / weir structure. Sludge is retained in the lagoon. The design population equivalent is 15,000. The design flow is 1.5 million gallons per day (MGD). Design sludge production is 225 dry tons per year.

The legal description is listed on the permit as the NW ¼, SE ¼, Section 33, Township 27 North, Range 16 East, in Mississippi County. The receiving stream for this facility is an unnamed tributary to Stevenson Bayou.

The Charleston Wastewater Treatment Lagoon was last inspected March 2, 2010. At that time, the facility was determined to be in compliance with no unsatisfactory features noted.

DISCUSSION OF INSPECTION AND OBSERVATIONS

Prior to the inspection, the files and Permit Conditions of MSOP MO-0120081 were reviewed.

The inspection was conducted during normal business hours. Prior notification of the inspection was provided to ensure timely access to the site. I met Mr. David Harris, Public Works Director (WW "A" Operator Certificate #2932), at Charleston City Hall and we proceeded to the lagoon facility. There, we joined Mr. Allen Rodgers, Operator (WW "D" Operator Certificate #2103), to discuss the purpose and scope of the inspection. Mr. Harris granted permission to access the site and Mr. Rodgers accompanied me throughout the inspection of the WWTF.

DISCUSSION OF INSPECTION AND OBSERVATIONS *(continued)*

Mr. Rodgers and I visually inspected the lagoon cells and blower equipment. All lagoon cells were well maintained as were the blower sheds. This system has three blowers in each of the two sheds. The blowers in each shed are rotated. Mr. Rodgers, Mr. Harris, and I then viewed the newly constructed ammonia reactor and UV systems. The outfall and receiving stream was then inspected and water quality monitoring readings taken.

Mr. Rodgers and I continued with the inspection by viewing 3/ 20 Charleston's lift stations. All lift stations appeared to be in working order. Check valves at the lift stations did not appear to be exercised regularly. Some of the lift stations were physically in better shape than others since the City is in the middle of renovating all their lift stations. We then joined back up with Mr. Harris to review the City's lab and records including maintenance logs, lab reports, and the last 12 months of discharge monitoring reports.

At the time of inspection, the WWTF appeared to be overall well operated and maintained.

WATER QUALITY MONITORING

The appropriate sampling materials were taken on the inspection, including a copy of the Missouri Department of Natural Resources' Standard Operating Procedures for Sampling. Instruments for field monitoring were taken on the inspection that are capable of testing pH, temperature, conductivity, and dissolved oxygen.

Water quality field monitoring was conducted at the following location for the listed parameters. The effluent was green in color and free of visible solids and odor.

Table 01

Outfall 001		
Parameter	**Result**	**Units**
pH	8.0	S.U.
Temperature	29.8	°C
Dissolved Oxygen	7.10	mg/L

The Environmental Services Program had recently pulled samples at the Charleston Wastewater Treatment Lagoon. Therefore, samples were not collected. The receiving stream was free and clear of any unsightly or harmful bottom deposits. When sampling results become available the City will be notified by mail.

COMPLIANCE DETERMINATION

Based on file review and observations made during the inspection Charleston WWT Lagoon was found to be **in compliance** with the Missouri Clean Water Law, the Clean Water Commission Regulations, and MSOP MO-0120081.

UNSATISFACTORY FEATURES

No unsatisfactory features identified at the time of inspection.

RECOMMENDATIONS

1. A couple of the lift stations that were viewed during the inspection had valves that appeared to have accumulated rust and didn't look like they had been exercised recently. It is recommended that the City routinely check and exercise these valves to ensure they are in working order.

CLOSING REMARKS

During the inspection information on renewal of MSOP MO0120081 was requested. This information was sent via email to the facility. A completed version of the following form should be sent to the Department of Natural Resources, Water Protection Program, ATTN: NPDES Permits and Engineering Section, P.O. Box 176, Jefferson City, MO 65102.

FORM B2 - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

A copy of the blank form can be found at http://dnr.mo.gov/forms/780-1805-f.pdf

It can also be found from our homepage www.dnr.mo.gov. Click on the forms permits tab at top. Choose water pollution from the drop down option and scroll down to discharge (water pollution).

I would like to thank Mr. David Harris and Mr. Allen Rodgers for their time and assistance during the inspection. If you have any questions feel free to contact me at (573) 840-9789.

SUBMITTED BY:

Wesley Hargraves
Environmental Specialist
Southeast Regional Office

REVIEWED BY:

Bradley K. Ledbetter
Chief, Water Pollution Control Unit
Southeast Regional Office

Photo #: 001
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: View of Charleston Lagoon Cells 3 (foreground) and 2 (background).

Date/Time Taken: 6/12/2013
Program: WPC Unit

Photo #: 002
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: Aerator pump shed.

Date/Time Taken: 6/12/2013
Program: WPC Unit

Photo #: 003
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: Charleston's recently installed nitrogen ammonia reactor.

Date/Time Taken: 6/12/2013
Program: WPC Unit

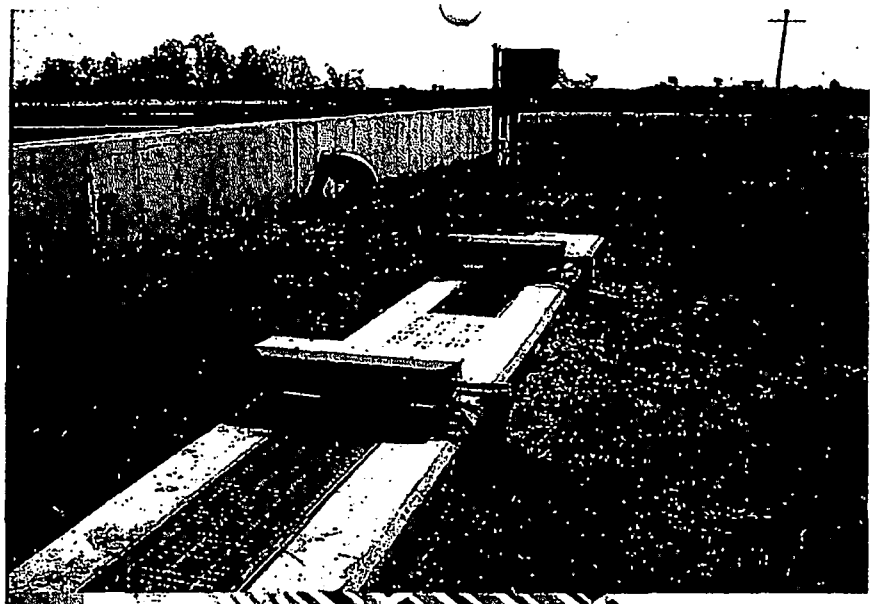


Photo #: 004
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: Charleston installed UV disinfection along with the ammonia reactor.

Date/Time Taken: 6/12/2013
Program: WPC Unit

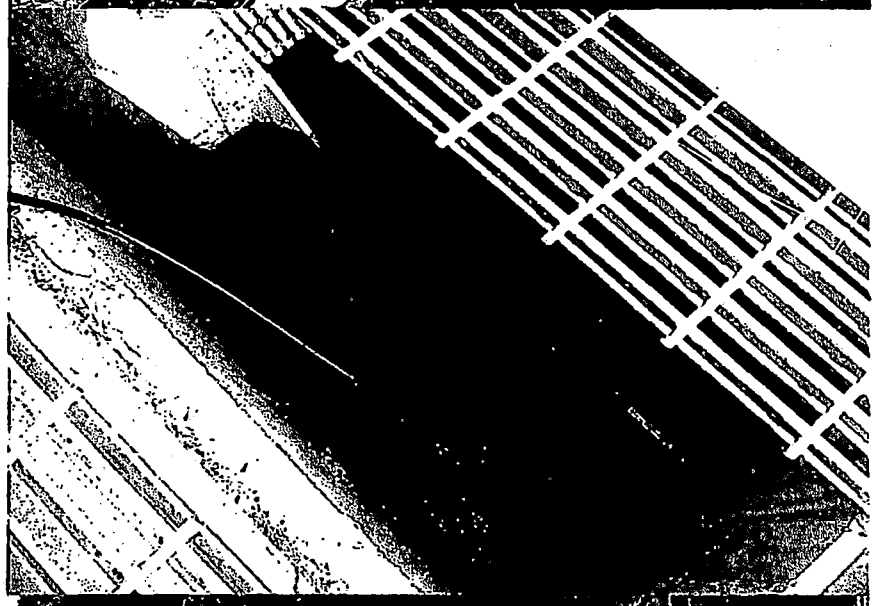


Photo #: 005
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: Effluent at Outfall #001

Date/Time Taken: 6/12/2013
Program: WPC Unit

Photo #: 006
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: Monsanto Road (Story Lift Station #12) Recently renovated in 2013.

Date/Time Taken: 6/12/2013
Program: WPC Unit

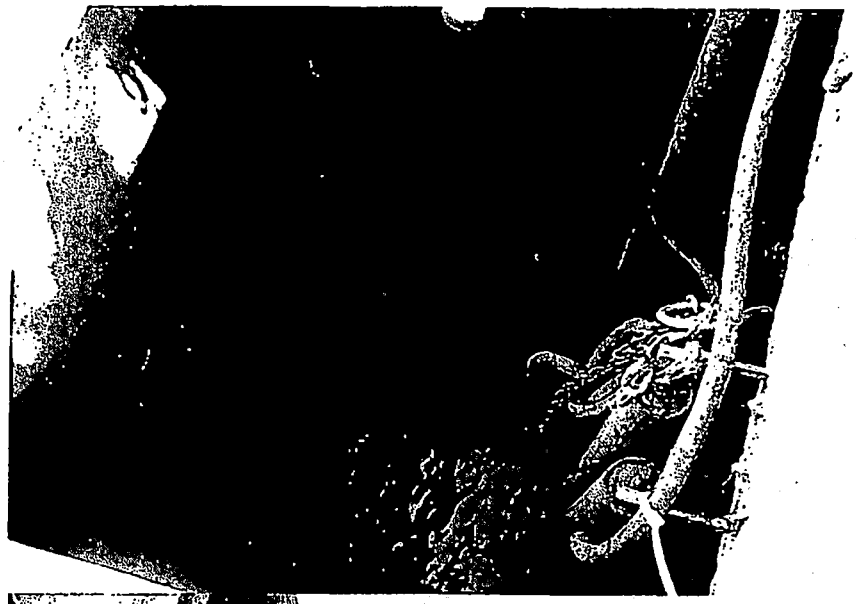


Photo #: 007
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: Gilmore Liftstation #18. This lift station is one of the City's worse. It has not been renovated since 1987, but is slated for renovation in the near future.

Date/Time Taken: 6/12/2013
Program: WPC Unit

Photo #: 008
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

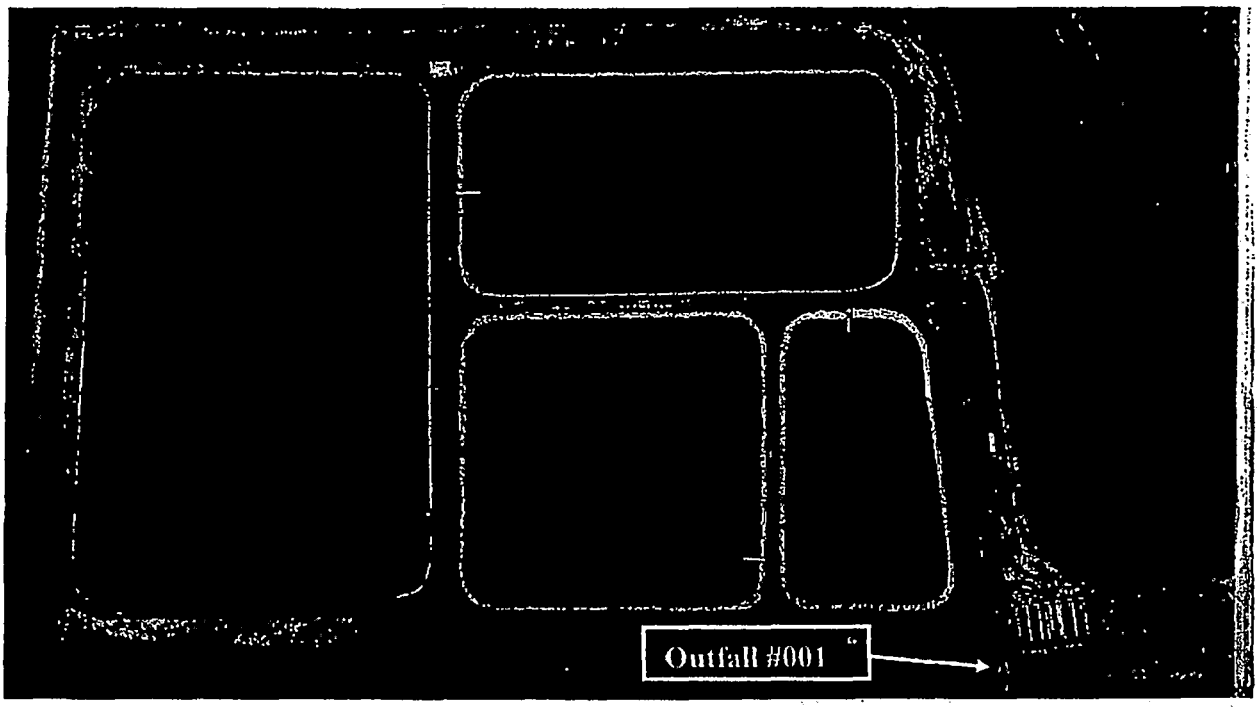
Description: Valves at both the Gilmore Lift station and the Shoe Factory Lift station #6 (pictured) should be regularly exercised to ensure they remain functional.

Date/Time Taken: 6/12/2013
Program: WPC Unit

Photo #: 009
By: Wesley Hargraves
Facility: Charleston Wastewater Treatment Lagoon
Permit: MO0120081
Location: Mississippi County

Description: The City of Charleston's Lab.

Date/Time Taken: 6/12/2013
Program: WPC Unit



Aerial view of Charleston WWT Lagoon taken via Google.

Lift Station Report Updated
4/7/14

Station #	Station Name	Size	Working Environment	Condition	Last Renovation	Needs
1	Del Farm	10hp	extreme	Fair	2009	impellers
		duplex				
2	Elm	10hp	extreme	good	2007	none
		duplex				
3	Paul	7.5 hp	extreme	poor	1987	total rebuild
		duplex				
4	Gier	10hp	moderate	fair	2011	impellers
		duplex				
5	Sixth St.	10hp	moderate	good	2011	none
		duplex				
6	Shoe Factory	10hp	extreme	fair	2007	gate & check
		duplex				valves
7	Prison	20hp	moderate	fair	1999	none
		duplex				
8	Boomland	10hp	moderate	fair	1996	none
		duplex				
9	Alco	3hp	moderate	fair	1996	impellars,multitrode
		duplex				wear rings
10	McDonalds	5hp	moderate	good	2013	none
		duplex				
11	Reeves	2hp	low	fair	2014	none
		duplex				
12	Story	10hp	extreme	good	2013	none
		duplex				
13	Blue Jay	3hp	moderate	good	2011	none
		duplex				
14	E. Overpass N.	3hp	moderate	fair	2010	flush valves
		duplex				Impellers,wear rings
15	E. Overpass S.	3hp	moderate	fair	2010	Impellers,wear rings
		duplex				
16	Golf Course	3hp	low	good	2014	none
		duplex				
17	N. Main	10hp	low	fair	1996	multitrode
		duplex				
18	Gilmore	10 hp	extereme	good	2014	none
		duplex				
19	Master	1-60 &2-50	extreme	fair	1990	Panel,wear rings,guide claws
		triplex				
20	Water Plant	25hp	low	good	2000	none
		duplex				

← new critical parts this year ?

Charleston Sewer Rehab

L.S. Zone	Length of Gravity Main	Number of Manholes	Length of Forcemain	Smoke Testing/ft	Clean & CCTV/ft	Manhole Insp/ea.	Smoke Testing	Clean & CCTV	Manhole Inspections	Total Inspection	% MH Rehab	% Gravity Rehab	Manholes Rehabed	Gravity Rehabed	$ per MH	$ per LF Gravity	Manhole Rehab Cost	Gravity Rehab Cost	Total Rehab	Plan Year: Inspection Work 1	2	3	4	Rehab Work 5	6	7	8	9	10
1	17,770	51	4,979	$ 0.55	$ 2.20	$ 88.00	$ 9,773.50	$ 17,592.30	$ 4,488.00	$ 31,853.80	20%	20%	10	3,554	$ 1,150.00	$ 85.00	$ 11,730.00	$ 302,090.00	$ 313,820.00	$ -	$ -	$ -	$ 31,853.80	$ -	$ -	$ -	$ -	$ 313,820.00	$ -
2	16,917	27	2,563	$ 0.55	$ 2.20	$ 88.00	$ 9,304.35	$ 16,747.83	$ 2,376.00	$ 28,428.18	20%	20%	5	3,383	$ 1,150.00	$ 85.00	$ 6,210.00	$ 287,589.00	$ 293,799.00	$ -	$ -	$ -	$ 28,428.18	$ -	$ -	$ -	$ -	$ 293,799.00	$ -
3	7,670	17	3,526	$ 0.55	$ 2.20	$ 88.00	$ 4,218.50	$ 7,593.30	$ 1,496.00	$ 13,307.80	25%	25%	4	1,918	$ 1,150.00	$ 85.00	$ 4,887.50	$ 162,987.50	$ 167,875.00	$ -	$ -	$ 13,307.80	$ -	$ -	$ -	$ -	$ 167,875.00	$ -	$ -
4	33,042	68	1,446	$ 0.55	$ 2.20	$ 88.00	$ 18,173.10	$ 32,711.58	$ 5,984.00	$ 56,868.68	25%	25%	17	8,261	$ 1,150.00	$ 85.00	$ 19,550.00	$ 702,142.50	$ 721,692.50	$ -	$ -	$ -	$ -	$ 56,868.68	$ -	$ -	$ -	$ -	$ 721,692.50
5	18,423	32	1,338	$ 0.55	$ 2.20	$ 88.00	$ 10,132.65	$ 18,238.77	$ 2,816.00	$ 31,187.42	15%	15%	5	2,763	$ 1,150.00	$ 85.00	$ 5,520.00	$ 234,893.25	$ 240,413.25	$ -	$ -	$ 31,187.42	$ -	$ -	$ -	$ -	$ 240,413.25	$ -	$ -
6	12,222	25	278	$ 0.55	$ 2.20	$ 88.00	$ 6,722.10	$ 12,099.78	$ 2,200.00	$ 21,021.88	20%	20%	5	2,444	$ 1,150.00	$ 85.00	$ 5,750.00	$ 207,774.00	$ 213,524.00	$ -	$ 21,021.88	$ -	$ -	$ -	$ -	$ -	$ 213,524.00	$ -	$ -
7	-	-	9,197	$ 0.55	$ 2.20	$ 88.00	$ -	$ -	$ -	$ -	20%	20%	-	-	$ 1,150.00	$ 85.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
8	4,730	11	1,306	$ 0.55	$ 2.20	$ 88.00	$ 2,601.50	$ 4,682.70	$ 968.00	$ 8,252.20	20%	20%	2	946	$ 1,150.00	$ 85.00	$ 2,530.00	$ 80,410.00	$ 82,940.00	$ -	$ -	$ 8,252.20	$ -	$ -	$ -	$ -	$ 82,940.00	$ -	$ -
9	800	2	1,742	$ 0.55	$ 2.20	$ 88.00	$ 440.00	$ 792.00	$ 176.00	$ 1,408.00	5%	5%	0	40	$ 1,150.00	$ 85.00	$ 115.00	$ 3,400.00	$ 3,515.00	$ -	$ 1,408.00	$ -	$ -	$ -	$ -	$ 3,515.00	$ -	$ -	$ -
10	288	3	2,145	$ 0.55	$ 2.20	$ 88.00	$ 158.40	$ 285.12	$ 264.00	$ 707.52	15%	15%	0	43	$ 1,150.00	$ 85.00	$ 517.50	$ 3,672.00	$ 4,189.50	$ 707.52	$ -	$ -	$ -	$ -	$ 4,189.50	$ -	$ -	$ -	$ -
11	-	-	100	$ 0.55	$ 2.20	$ 88.00	$ -	$ -	$ -	$ -	0%	0%	-	-	$ 1,150.00	$ 85.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
12	5,986	16	1,830	$ 0.55	$ 2.20	$ 88.00	$ 3,292.30	$ 5,926.14	$ 1,408.00	$ 10,626.44	20%	20%	3	1,197	$ 1,150.00	$ 85.00	$ 3,680.00	$ 101,762.00	$ 105,442.00	$ -	$ 10,626.44	$ -	$ -	$ -	$ -	$ -	$ 105,442.00	$ -	$ -
13	432	4	1,022	$ 0.55	$ 2.20	$ 88.00	$ 237.60	$ 427.68	$ 352.00	$ 1,017.28	20%	20%	1	86	$ 1,150.00	$ 85.00	$ 920.00	$ 7,344.00	$ 8,264.00	$ -	$ 1,017.28	$ -	$ -	$ -	$ -	$ -	$ 8,264.00	$ -	$ -
14	1,062	3	1,490	$ 0.55	$ 2.20	$ 88.00	$ 584.10	$ 1,051.38	$ 264.00	$ 1,899.48	20%	20%	1	212	$ 1,150.00	$ 85.00	$ 690.00	$ 18,054.00	$ 18,744.00	$ -	$ 1,899.48	$ -	$ -	$ -	$ -	$ -	$ 18,744.00	$ -	$ -
15	2,529	9	462	$ 0.55	$ 2.20	$ 88.00	$ 1,390.95	$ 2,503.71	$ 792.00	$ 4,686.66	20%	20%	2	506	$ 1,150.00	$ 85.00	$ 2,070.00	$ 42,993.00	$ 45,063.00	$ -	$ 4,686.66	$ -	$ -	$ -	$ -	$ -	$ 45,063.00	$ -	$ -
16	1,530	4	2,000	$ 0.55	$ 2.20	$ 88.00	$ 841.50	$ 1,514.70	$ 352.00	$ 2,708.20	25%	25%	1	383	$ 1,150.00	$ 85.00	$ 1,150.00	$ 32,512.50	$ 33,662.50	$ 2,708.20	$ -	$ -	$ -	$ -	$ 33,662.50	$ -	$ -	$ -	$ -
17	6,865	23	1,285	$ 0.55	$ 2.20	$ 88.00	$ 3,775.75	$ 6,796.35	$ 2,024.00	$ 12,596.10	20%	20%	5	1,373	$ 1,150.00	$ 85.00	$ 5,290.00	$ 116,705.00	$ 121,995.00	$ 12,596.10	$ -	$ -	$ -	$ -	$ 121,995.00	$ -	$ -	$ -	$ -
18	12,247	29	2,862	$ 0.55	$ 2.20	$ 88.00	$ 6,735.85	$ 12,124.53	$ 2,552.00	$ 21,412.38	20%	20%	6	2,449	$ 1,150.00	$ 85.00	$ 6,670.00	$ 208,199.00	$ 214,869.00	$ 21,412.38	$ -	$ -	$ -	$ -	$ 214,869.00	$ -	$ -	$ -	$ -
19	2,180	7	1,742	$ 0.55	$ 2.20	$ 88.00	$ 1,199.00	$ 2,158.20	$ 616.00	$ 3,973.20	15%	15%	1	327	$ 1,150.00	$ 85.00	$ 1,207.50	$ 27,795.00	$ 29,002.50	$ 3,973.20	$ -	$ -	$ -	$ -	$ 29,002.50	$ -	$ -	$ -	$ -
	144,693	331	41,313				$ 79,581.15	$ 143,246.07	$ 29,128.00	$ 251,955.22							$ 78,487.50	$ 2,540,322.75	$ 2,618,810.25	$ 41,397.40	$ 40,659.74	$ 52,747.42	$ 60,281.98	$ 56,868.68	$ 403,718.50	$ 394,552.00	$ 491,228.25	$ 607,619.00	$ 721,692.50

Total $2.87 M

~ 2010 Waters Engineering

CITY OF CHARLESTON

10,915

12,368

8,902

15,654

5829

29,144

CITY LIMITS LINE

CITY LIMITS LINE

CITY LIMITS LINE

CITY LIMITS LINE

77 60 62

57

UU

105

yellow - 2012

green - 2013

○ LIFT STATION
◉ SAN. SEWER MANHOLE
○ SAN. SEWER FLUSH TANK
SAN. SEWER MAIN
SAN. SEWER FORCEMAIN

SCALE:
1"=600'

RICHARD E. COCHRAN JR NUMBER E26513 REGISTERED PROFESSIONAL ENGINEER STATE OF MISSOURI

CITY OF CHARLESTON
MISSISSIPPI COUNTY, MO.

SANITARY SEWER SYSTEM

WATERS ENGINEERING, INC.

Civil Engineering and Land Surveying
P. O. Box 567 – 908 South Kingshighwy
Sikeston, Missouri 63801

Date: 8-30-10
Revised:
Drawn By: DH/RC/DFS
Project No. 10-127
Sheet No.

Attachment 18 Page 2 of 5

[redacted]

6.1.1 Manholes

To date, a total of 330 manholes have been opened, inspected, and photographed with GPS coordinates recorded. The individual manhole inspection tabulation data is included at the end of this report as Exhibit VI-1, Manhole Inspection Tabulation. Of the manholes inspected the following data was noted:

L.S. Zone	Number of Manholes Inspected	Number of Brick Manholes	Number of Precast Manholes	No. Of Probs Found	No. Of Defects Found	No. Of Leaks in Top	No. Of Leaks in Walls	No. Of Leaks in Base
1	43	37	6	11	7	0	5	2
2	37	22	15	9	8	2	6	0
3	16	0	16	3	1	0	1	0
4	70	32	38	22	11	2	8	1
5	33	12	21	11	1	0	1	0
6	27	10	17	16	4	0	3	1
7	0	0	0	0	0	0	0	0
8	13	0	13	4	4	3	0	1
9	0	0	0	0	0	0	0	0
10	4	0	4	2	2	2	0	0
11	0	0	0	0	0	0	0	0
12	17	0	17	2	2	2	0	0
13	4	3	1	1	0	0	0	0
14	3	0	3	1	1	1	0	0
15	7	0	7	1	1	0	1	0
16	4	0	4	2	2	1	0	1
17	18	1	17	9	6	4	1	1
18	28	0	28	8	7	6	0	1
19	6	0	6	1	1	1	0	0
Total	330	117	213	103	58	24	26	8

2013
2014
2012

This data shows that approximately 31% of the manholes need attention. This may be due to actual defects or may be due to siltation, excessive roots, surcharging, or other issues. Approximately 18% of the manholes have actual defects which allow some infiltration. Almost 45% of the leaks were found in the wall sections of the manholes, 14% in the base, and 41% in the tops.

One point of interest from this data is the fact that the zones with the highest defect percentage is also the zones with the highest precast concrete manhole percentage. While one would think brick manholes would pose more problems, it is actually the opposite in this system. This is most likely due to poor construction and installation. Even when reviewing the leaking walls, there is no correlation between leaks and brick construction.

6.1.2 Gravity Mains

To date, a total of 145,556+ linear feet of gravity main has been smoke tested. During smoke testing, GPS coordinates were also taken of all visible signs of leakage. The individual Smoke Testing Results Defect Listing is included at the end of this report as Exhibit VI-2, Smoke Testing Defect Listing. A legend outlining the defect types is also included at the end of this report as Exhibit VI-3, Defect Legend. From the gravity main inspections, the following data was noted:

L.S. Zone	Length of Line Smoke Tested	Number of Defects Found	Number of Faulty Cleanouts	Number of Miscellaneous Defects	Number of Main Line Defects
1	19,175	19	13	1	5
2	20,289	35	32	0	3
3	6,557	12	12	0	0
4	31,904	30	30	0	0
5	20,439	41	40	0	1
6	12953+	23	21	2	0
7	768	0	0	0	0
8	1,660	2	2	0	0
9	2,107	4	3	1	0
10	479	1	1	0	0
11	0 -OC. Rem>	0	0	0	0
12	3,980	3	3	0	0
13	574	0	0	0	0
14	815	2	1	1	0
15	2,273	2	1	1	0
16	1,088	0	0	0	0
17	6,392	2	2	0	0
18	11,279	5	5	0	0
19	2,824	0	0	0	0
Total	145,556	181	166	6	9

2013 46,628
2014 65,296
2012 34,239
91

From this data, it appears that approximately 91% of the defects found in the lines were cleanout related. Cleanout related defects include missing/broken cleanout caps, broken cleanout pipes, abandoned cleanouts. Most of these defects are easily fixed yet, they contribute the most water to the system. They are found throughout the system with no regard to age of the mains; but, do correlate with the size of the zone.

During a storm event, it would be easy for each of these 4-inch cleanouts to take in 10 gpm or more each. Over a 12 hour period, this would account for almost 1,200,000 gallons of water.

8. Alternative Recommendation

An outline of the recommended improvements are shown below. The costs associated with these improvements are shown in Section 9 of this report.

8.1 Wastewater Collection System

From the existing data obtained through smoke testing, the following steps should be taken:

a. Repair all sources of inflow on private property which includes service line cleanout defects, illicit connections, open service lines, etc.

b. Locate, open, and clean all manholes and lines that have not been found or are problems and re-inspect and smoke test to ensure that no additional defects exist.

c. Perform Closed Circuit TV inspection of the following main lines, and any additional ones found in Step b above, to determine what the defect is and determine the most cost effective manner of repair:

Defect No.	Starting Manhole	Ending Manhole
16	18-2 Gilmore + State	18-3
31	1-22	Lamphole West
32	1-22 w drainage	Lamphole East
33	1-22	Lamphole East
34	1-22	Lamphole East
39	1-13 - Vine -	1-14
63	2-32 Johnson St	2-33
64	2-32	2-33
167	5-7 Cypress + Smith	Lamphole East

d. Repair the defective manholes in the following manner:

Frame & Lid Defects - City forces to replace ring, frame, & lid as needed.
Brick Manhole Wall Defects - Replace or line manhole
Concrete Manhole Wall Defects - Grout Manhole
Bottom Defects - Replace or line manhole

e. Utilize all methods of repair that are appropriate for the particular defect as determined by the Engineer reviewing the CCTV inspection. The primary methods of repair will most likely include open cut repair and Cured-in-Place Liner.

United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101

Date: APR 01 2015

Subject: Transmittal of Sample Analysis Results for ASR #: 6723

Project ID: WGP385

Project Description: Charleston Lagoon CSI

From: Margaret E.W. St. Germain, Chief M St Germain
Laboratory Technology & Analysis Branch, Environmental Sciences & Technology Division

To: Pete Green
ENSV/EFCB

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the enclosed Customer Satisfaction Survey and Data Disposition/Sample Release memo for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Data Disposition/Sample Release memo.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Pete Green **Org:** ENSV/EFCB **Phone:** 913-551-7343

Project ID: WGP385

Project Desc: Charleston Lagoon CSI

Location: Charleston **State:** Missouri **Program:** Water Enforcement

Purpose: Compliance Monitoring **GPRA PRC:** 501E50

Compliance Sampling at Wastewater Lagoon.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank

Units: Specific units in which results are reported.

Deg C = Degrees Celsius
mg/L = Milligrams per Liter
SU = Standard Units (pH)
MGD = Million Gallons per Day
ug/L = Micrograms per Liter

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.
U = The analyte was not detected at or above the reporting limit.
J = The identification of the analyte is acceptable; the reported value is an estimate.

ASR Number: 6723 **Sample Information Summary** **04/01/2015**

Project ID: WGP385 **Project Desc:** Charleston Lagoon CSI

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1	- __	Water	Charleston Lagoon Influent		03/03/2015	13:25			03/05/2015
2	- __	Water	Charleston Lagoon Influent				03/03/2015	13:25	03/05/2015
3	- __	Water	Charleston Lagoon Influent		03/04/2015	08:00			03/05/2015
4	- __	Water	Charleston Lagoon Influent		03/03/2015		03/04/2015		03/05/2015
10	- FB	Water	Charleston Lagoon		03/04/2015	16:00			03/05/2015
11	- __	Water	Charleston Lagoon Effluent		03/03/2015	15:00			03/05/2015
13	- __	Water	Charleston Lagoon Effluent		03/04/2015	08:45			03/05/2015

Analysis	Comments About Results For This Analysis

1 Ammonia in Water

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Method 350.1 v2.0

Samples: 2-__ 4-__ 10-FB 11-__ 13-__

Comments:

1 BOD5 in Water by DO Probe

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3153.1F

Samples: 2-__ 4-__ 11-__ 13-__

Comments:
(N/A)

1 Flow, Million Gallons per Day

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 11-__ 13-__

Comments:
(N/A)

1 Metals in Water by ICP-AES

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3122.3F

Samples: 10-FB 11-__ 13-__

Comments:
Iron and Manganese were J-coded in sample 11. Although the analytes in question have been positively identified in the sample, the quantitation is an estimate (J-coded) due to high recovery of these analytes in the laboratory matrix spike (111/113, 109 for Iron and 112, 108 for Manganese). The actual concentration for these analytes may be lower than the reported value.

1 NFS or Nonfilterable Solids

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3142.3G

Samples: 2-__ 4-__ 11-__ 13-__

Comments:

Analysis **Comments About Results For This Analysis**

1 Nitrogen, Nitrate+Nitrite in Water

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Method 353.2 for acidified samples (for total NO3+NO2 analysis). v2.0

Samples: 2-__ 4-__ 10-FB 11-__ 13-__

Comments:

1 Oil & Grease in Water

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Method 1664

Samples: 10-FB 11-__ 13-__

Comments:
(N/A)

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 3-__ 11-__ 13-__

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 3-__ 11-__ 13-__

Comments:
(N/A)

1 Total Kjeldahl Nitrogen in Water Colorimetric

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3133.3G

Samples: 2-__ 4-__ 10-FB 11-__ 13-__

Comments:

ASR Number: 6723 **RLAB Approved Sample Analysis Results** **04/01/2015**

Project ID: WGP385 **Project Desc:** Charleston Lagoon CSI

Analysis/ Analyte	Units	1-__	2-__	3-__	4-__
1 Ammonia in Water					
Ammonia as Nitrogen	mg/L		5.42		9.35
1 BOD5 in Water by DO Probe					
BOD5	mg/L		42.1		98.8
1 NFS or Nonfilterable Solids					
Solids, nonfilterable	mg/L		92.4		149
1 Nitrogen, Nitrate+Nitrite in Water					
Nitrate + Nitrite as Nitrogen	mg/L		0.0555		0.415
1 pH of Water by Field Measurement					
pH	SU	7.14		6.98	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	11.9		9.8	
1 Total Kjeldahl Nitrogen in Water Colorimetric					
Total Kjeldahl Nitrogen	mg/L		10.1		15.4

ASR Number: 6723 **RLAB Approved Sample Analysis Results** **04/01/2015**

Project ID: WGP385 **Project Desc:** Charleston Lagoon CSI

Analysis/ Analyte	Units	10-FB	11-__	13-__
1 Ammonia in Water				
Ammonia as Nitrogen	mg/L	0.100 U	2.14	4.29
1 BOD5 in Water by DO Probe				
BOD5	mg/L		19.0	23.6
1 Flow, Million Gallons per Day				
Flow (MGD)	MGD		1.189	1.2615
1 Metals in Water by ICP-AES				
Aluminum	ug/L	50 U	50 U	50 U
Antimony	ug/L	50 U	50 U	50 U
Arsenic	ug/L	25 U	25 U	25 U
Barium	ug/L	10 U	57	58
Beryllium	ug/L	3 U	3 U	3 U
Cadmium	ug/L	3 U	3 U	3 U
Calcium	mg/L	2.00 U	28.9	29.6
Chromium	ug/L	15 U	15 U	15 U
Cobalt	ug/L	10 U	10 U	10 U
Copper	ug/L	5 U	5 U	8
Iron	ug/L	50 U	328 J	414
Lead	ug/L	50 U	50 U	50 U
Magnesium	mg/L	2.00 U	6.68	6.86
Manganese	ug/L	5 U	57 J	82
Molybdenum	ug/L	15 U	15 U	15 U
Nickel	ug/L	20 U	20 U	20 U
Potassium	mg/L	2.00 U	6.75	7.11
Selenium	ug/L	50 U	50 U	50 U
Silver	ug/L	25 U	25 U	25 U
Sodium	mg/L	5.00 U	22.9	23.4
Thallium	ug/L	50 U	50 U	50 U
Titanium	ug/L	20 U	20 U	20 U
Vanadium	ug/L	10 U	10 U	10 U
Zinc	ug/L	25 U	25 U	25 U
1 NFS or Nonfilterable Solids				
Solids, nonfilterable	mg/L		14.3	14.1
1 Nitrogen, Nitrate+Nitrite in Water				
Nitrate + Nitrite as Nitrogen	mg/L	0.0400 U	11.1	8.38
1 Oil & Grease in Water				
Oil & Grease	mg/L	5.00 U	5.00 U	5.00 U
1 pH of Water by Field Measurement				
pH	SU		7.02	6.98
1 Temperature of Water by Field Measurement				
Temperature	Deg C		2.6	2.7
1 Total Kjeldahl Nitrogen in Water Colorimetric				
Total Kjeldahl Nitrogen	mg/L	0.200 U	5.50	8.02